

**The psychology of mukbang watching:
Can watching others eat be addictive?**

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for the degree of Doctor of Philosophy

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Statement of Contribution of Others

I declare that my contribution to the collaborative work presented in this thesis was substantial and prominent, involving the development of original ideas and the implementation of subsequent work. Appendix I provides detailed information about my specific contribution to this collaborative effort.

Dedication

I would like to dedicate this thesis to all those who provided their support and understanding, particularly to Professor Mark Griffiths. I am grateful for his unwavering support, guidance, and trust, which made it possible for me to achieve my life's greatest accomplishment.

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- Kircaburun, K., Yurdagül, C., Kuss, D., Emirtekin, E., & Griffiths, M. D. (2021). Problematic mukbang watching and its relationship to disordered eating and internet addiction: A pilot study among emerging adult mukbang watchers. *International Journal of Mental Health and Addiction*, 19, 2160-2169. <https://doi.org/10.1007/s11469-020-00309-w> (Chapter 8)
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Abstract

Despite the abundance of research on the addictive use of various online activities including social networking, gaming, shopping, sex, and gambling, psychologists have paid very little attention to mukbang (i.e., eating broadcasts) watching. Therefore, this thesis aimed to: (i) develop and validate assessment tools to assess AMW and mukbang watching motivations; (ii) examine the personality, motivational, psychological, and emotional factors that may exacerbate AMW; (iii) investigate the associations between AMW and other technology-related behavioural addictions, as well as disordered eating; and (iv) explore the symptoms of addictive mukbang watching (AMW) and investigate the potential transition from regular mukbang watching to AMW, using qualitative methods. To achieve these objectives, a range of methodologies, including quantitative psychometric and correlational self-report surveys and qualitative interviews, were employed. Results indicated that (i) two psychometric scales for AMW and one for mukbang watching motives are valid and reliable to assess mukbang watching addiction and motivations, (ii) AMW may have several correlates including loneliness, emotional dysregulation, anxiety, impulsivity, extroversion, conscientiousness, procrastination, internet addiction, addictive *YouTube* use, and disordered eating, and (iii) some mukbang viewers may be at risk for showing symptoms of addiction related to their mukbang watching including preoccupation, withdrawal, tolerance, inability to stop, loss of interest, continuing despite problems, deceiving family and friends, relieving negative mood, and risking relationships. Overall, the findings support the notion that while regular mukbang watching may have some benefits for some viewers (e.g., mitigating social isolation), uncontrolled engagement in mukbang watching may manifest as an online addictive behaviour that can jeopardise the mental and physical well-being of individuals.

CHAPTER 1: A brief overview of online addictions

1.1 Introduction

The internet has gained more popularity and started to enter many individuals' lives since the late 1990s and today, many people cannot imagine a life without it. While in some cases internet use is voluntary, its use has evolved into necessity for many. With the development of the internet, all electronic devices such as television, radio, telephone, etc., have been reshaped according to the internet (Rose et al., 2015). Now the majority of broadcasts (e.g., television and radio) have shifted online. Moreover, entertainment such as music, videos, movies and television series are streamed over the internet. Nowadays, using the internet has become a very common and necessary skill. Unlike other means of communication, regardless of geographic location, the internet allows individuals to communicate all around the world which make information sharing, togetherness, and interaction through computers and smartphones possible (Mukhopadhyay & Suryadevara, 2014). The internet has made knowledge accessible and very quickly shareable worldwide which has made it possible for individuals to share and be intertwined more than ever before.

According to statistics from Internet Live Stats (2022), eight billion people live in the world and 5.4 billion of them are internet users. The fact that the internet has entered human life to this extent has many positive features. However, it can also cause some negative effects. Bremer (2005) outlined the positive and negative effects of the internet in individuals' lives. Positive features include (i) ease of doing research and gathering information; (ii) speed of communication with family, friends and immediate circle; (iii) new job and income opportunities; and (iv) convenience in business (e.g., health services, virtual shopping,

advertisement). In addition to these positive features, some negative aspects include: (i) access to false and harmful information; (ii) cyberbullying; (iii) virtual fraud; (iv) identity theft; (v) pornography, child abuse, and prostitution; (vi) illegal gambling; and (vii) internet addiction (Bremer, 2005). Due to the scope of this thesis, the negative effects of the internet in terms of addiction will be emphasised. The next section examines technology-related behavioural addictions.

1.2 Technology-related behavioural addictions

Scholars have investigated the addictive use of internet including unspecified/general internet addiction, online gaming addiction, social media addiction, online shopping addiction, online gambling addiction, and online pornography addiction (Brand et al., 2016, 2019; Montag et al., 2015; Sindermann et al., 2018). Some scholars claimed general/unspecified internet addiction to be a unique type of problematic behaviour regardless of the activity used online (Kandell, 1998). However, given most of the internet addicts are addicted to the activity carried out online rather than being addicted to internet itself (Griffiths, 1999), the majority of researchers argued that internet addiction is an overarching term to express the sum of distinct forms of specific internet addictions including online gaming, social media, online shopping, online gambling, and online pornography addictions (Király et al., 2014; Montag et al., 2015). The next section examines unspecified/general internet addiction.

1.2.1 Unspecified/general internet addiction

The widespread use of the internet has led to an increase in the time spent online. As soon as some users started to lose control over their use of the internet, the issue of internet addiction started to be discussed (Griffiths, 1996; Young, 1996). While internet addiction has become accepted as a disorder that needs to be treated in some Asian countries (Chia et al., 2020), there is no consensus among researchers in western countries that internet addiction is a disorder

(Winkler et al., 2013). As a result, internet addiction was not included in the DSM-5 by the American Psychiatric Association (APA) as a separate disorder (APA, 2013). Due to the lack of common view and definition of internet addiction, different terms have been used in the literature to express the concept of internet use problems, including internet addiction (Chou & Hsiao, 2000; Young, 1996), pathological internet use (Davis, 2001), problematic internet use (Caplan, 2002), compulsive internet use (Meerkerk et al., 2009) and internet use disorder (Wegmann et al., 2018). However, these terms describing internet use problems often use similar diagnostic criteria (Kuss et al., 2014).

For the sake of consistency, this thesis uses the term ‘internet addiction’ to describe a range of similar and/or overlapping online addictive, compulsive, and/or excessive behaviours. Internet addiction has been defined as “a psychological dependence on the internet, regardless of the type of activity once logged on” (Kandell, 1998, p.12). While Young (1998) defines internet addiction as a person’s inability to control internet use, a person with internet addiction neglects social relationships, work or school duties, and personal health due to internet use as well as experiencing altered sleep and eating habits in a harmful way (Spada, 2014). According to Davis (2001), internet addiction can be divided into two types: (i) specific pathological use where an individual’s compulsive participation in problematic internet use is for a specific purpose, such as shopping, pornography use, or online gaming; and (ii) general pathological internet use where an individual’s involvement comprises general and multi-purpose problematic internet use (Davis, 2001). According to Griffiths (2005), internet addiction should be investigated as one of the technology-related behavioural addictions and described as having adverse symptoms comprising core components of addiction: mood modification, tolerance, withdrawal, salience, conflict, and relapse. *Mood modification* refers to the use of the behaviour by an individual in an attempt to avoid negative feelings and/or gain positive feelings to feel better. *Tolerance* refers to the need for increased engagement in the behaviour in order to

achieve the former mood-modifying effects. *Withdrawal* refers to psychological distress and physical effects that occur when an individual stops engaging in a particular behaviour and/or reduces engaging in an activity. *Salience* refers to preoccupation with the behaviour to a degree that a particular activity becomes the most important activity in an individual's life. *Conflict* refers to an individual experiencing detrimental psychosocial impact on their relationships, education and/or occupation as a result of excessive engagement in a particular activity. *Relapse* refers to the failed attempts to reduce/stop a particular behaviour which usually results in increased engagement on the activity (Griffiths, 2005).

Scholars report a range between 7% and 30% for addictive internet users in different meta-analytic studies (Chia et al., 2020; Li et al., 2018; Pan et al., 2020; Zhang et al., 2018). Given the negative consequences identified for internet addiction including psychiatric distress, loneliness, sleep problems, and physiological problems (Kuss et al., 2014; Ostovar et al., 2016), internet addiction is considered a health problem among young people and adults that should be taken seriously by health professionals (Anderson et al., 2017).

Individuals benefit from many different online applications (e.g., gaming, gambling, sex, shopping, social networking, etc.) with the rapid developments in internet technologies and where individuals obtain specific gratification from these activities (Montag et al., 2015). Consequently, this led to the development of varied and specific internet-use motives among individuals. The next sections investigate the aforementioned specific forms of internet addictions (i.e., online gaming addiction, social media addiction, online shopping addiction, online gambling addiction, and online pornography addiction).

1.2.2 Online gaming addiction

Gaming addiction has become a topic of increasing research interest. Researchers have used terminology such as 'excessive' or 'problematic' to denote the harmful use of videogames. Due

to the lack of common view and definition of gaming addiction, different terms have been used in the literature to express the concept of gaming addiction including problem videogame playing (King et al., 2011), problematic online game use (Kim & Kim, 2010), video game addiction (Skoric et al., 2009), online gaming addiction (Griffiths, 2010), and internet gaming addiction (Kuss & Griffiths, 2012a). Increased research concerning online gaming addiction has led to formal diagnostic criteria (Griffiths, Kuss, & King, 2012). The American Psychiatric Association (APA) introduced 'Internet Gaming Disorder' (IGD), as a tentative disorder in the 5th edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5) in 2013. IGD was defined as “*persistent and recurrent use of the internet to engage in games, often with other players, leading to clinically significant impairment or distress*” (APA, 2013, p. 795). According to the APA, an individual should have five out of nine symptoms over a 12-month period (APA, 2013). These symptoms include (i) being excessively preoccupied with gaming (e.g., salience), (ii) having withdrawal symptoms when not gaming (e.g., withdrawal), (iii) spending more and more time gaming (e.g., tolerance), (iv) failed attempts to reduce or quit gaming (e.g., relapse), (v) losing interest in hobbies due to gaming, (vi) engaging in gaming despite its adverse consequences (e.g., conflict), (vii) deceiving others about gaming duration, (viii) achieving a positive mood via gaming (e.g., mood modification), and (ix) risking, jeopardizing, or losing a job or relationship because of gaming (APA, 2013).

The World Health Organization (WHO) followed the APA by acknowledging 'Gaming Disorder' (GD) as a formal diagnosis in the 11th revision of the *International Classification of Diseases* (ICD-11) in 2018. According to the WHO, in order for regular gaming to be considered as a GD, the gaming behaviour should have adverse effects on an individual's social, personal, and/or educational/occupational activities in the previous 12 months (WHO, 2018). Three primary symptoms were identified by WHO to diagnose GD comprising (i)

impaired control over gaming, (ii) elevated priority given to gaming, and (iii) increased time spent on gaming despite problems (WHO, 2018).

In the past three decades, many studies have attempted to examine the prevalence of online gaming addiction. However, given the existing various definitions, instruments, and/or self-selected samples used, there has been a varied number of prevalence rates across studies (Pontes & Griffiths, 2015). Nevertheless, while the studies that used nationally representative samples reported prevalence rates ranging from 1.2% to 5.5%, other studies' rates varied between 1% to 15% (Fam, 2018; Lemmens et al., 2015; Pontes et al., 2015; Wartberg et al., 2020; Wu et al., 2018).

One of the more recent systematic review and meta-analysis study that investigated 53 studies on gaming disorder reported an average of 3% prevalence rate for the worldwide gaming disorder although the figure was below 2% when only the highest quality studies were included in the analysis (Stevens et al., 2021). Despite their variation, these rates still suggest that online gaming addiction is an important health problem that affects a significant proportion of individuals especially among young people (Fam, 2018). Studies have identified several problematic outcomes related to online gaming addiction including elevated depression, anxiety, stress, physical and emotional problems, and diminished well-being (Kuss & Griffiths, 2012a). Therefore, like generalised internet addiction, online gaming addiction is another important technology-related behavioural addiction that warrants further scholarly attention.

1.2.3 Social media addiction

Social media use has emerged as a result of developments in internet technologies. Social media use can be summarised as the use of internet-based platforms that enable individuals to publish their own content on web pages and communicate with each other (Bertot et al., 2010). Some of the most widely used social media platforms are *Facebook*, *Twitter*, *Instagram*,

YouTube, LinkedIn, TikTok, and WhatsApp (Kircaburun et al., 2020). Social media has beneficial effects on people's lives including educational and informational uses, maintaining existing relationships and meeting new people, passing time in an entertaining way, and expressing and promoting oneself to others (Kircaburun et al., 2020). However, studies in the past decade indicate that social media can pose health risks for some users especially when individuals lose control over their time spent on social media use (Yurdagül et al., 2021). Furthermore, social media can have detrimental effects on subjective well being (e.g., life satisfaction, eudaimonic well-being), especially when higher levels of social comparison are involved (Gerson et al., 2016).

In the past decade, scholars began using the term 'addiction' to describe excessive and compulsive social media use. Social media addiction refers to thinking a lot about social media sites, having a strong urge to spend time on social media, and lack of ability to reduce time spent using social media despite its detrimental effects to social, educational, and/or professional life, as well as mental and physical health (Andreassen & Pallesen, 2014). Research has associated social media addiction with greater negative mood, depressive symptoms, anxiety, and loneliness among both young people and adults (Brown & Tiggemann, 2016; Sherlock & Wagstaff, 2018; Yurdagül et al., 2021). Furthermore, addictive use of social media is more likely to result in emotional exhaustion and reduce individuals' coping abilities and put their real-life social relationships and job performance at risk (Sriwilai & Charoensukmongkol, 2016; Tokunaga, 2011).

Over the years, varying prevalence rates have been reported for social media addiction. While some studies reported single-digit rates ranging between 1.6% and 8.6% (Alabi, 2012; Wolniczak et al., 2013), some others classified almost half of the participants of their studies as social media addicts (Busalim et al., 2019; Khumsri et al., 2015). These different results were reported to be associated with the different demographic characteristics of the samples

and different assessment tools and theoretical frameworks of social media addiction used (Andreassen, 2015). One of the most recent meta-analysis studies that included 63 independent samples with 34,798 participants from 32 nations spanning seven world regions reported that the prevalence estimates were ranging between 5% and 31% according to the classification scheme used and cultural factors (Cheng et al., 2021).

Nevertheless, despite the varied outcomes of epidemiological studies, there is growing empirical evidence that suggests that social media addiction is an important public health risk that needs more focus and examination by public health experts and academics (Kuss & Griffiths, 2017). Although social media addiction has not been officially recognized by APA and WHO, there is increasing empirical evidence acknowledging social media addiction as one of the significant technology-related behavioural addictions that threatens adolescent development and public health in general (Kuss & Griffiths, 2017).

1.2.4 Online shopping addiction

Consumption is one of the important activities that should be considered as the basis of the economy. In the consumption process, individuals have to make the right decision for themselves by comparing both rational and sensory factors (Kirezli & Arslan, 2019). There are many factors that push individuals to make an unplanned purchase including the campaigns and discounts, as well as the atmosphere of the shopping places built to increase consumption by encouraging the consumer to shop (Javadi et al., 2012). However, one of the most important factors triggering unplanned shopping is hedonic motivation (Lo & Harvey, 2012). Buyers with hedonic motivation are more interested in the pleasant and pleasurable aspects of shopping. Shopping desire can turn into a pleasant activity with the progression of the buyer's hedonic desire to buy in which advanced impulse buying can transform into an action that is out of

control and harmful to individuals (Sohn & Choi, 2014). Consequently, regular shopping behaviour may transform into pathological and/or addictive shopping.

Shopping addiction, often referred to as ‘compulsive buying disorder’ or ‘compulsive buying’, was first described by the German psychiatrist Emil Kraepelin in 1915. Shopping addiction is characterised by repetitive and overwhelming urges to purchase goods, which are often useless and inexpensive (Lejoyeux & Weinstein, 2010; Murali et al., 2012). However, there is still a lack of a consensus on the definition and conceptualization of shopping addiction, as well as an official recognition and diagnostic criteria of addictive shopping (Griffiths et al., 2016). Due to the lack of common view and definition of shopping addiction, different terms have been used in the literature to express the concept including compulsive buying, impulsive purchasing, compulsive consumption, impulsive spending patterns, compulsive buying disorder, hedonic shopping, and shopping addiction (Baumeister, 2002; Günüç & Keskin, 2016; Hirschman, 1992; Sussman et al., 2014; Sussman et al., 2010; Vohs & Faber, 2003; Workman, 2010).

The developments in internet technologies has also had its effects on shopping and consumer behaviour. In the past two decades, online shopping has increasingly dominated overall shopping processes due to its benefits in information search of products and purchasing ease (Rose & Samouel, 2009). More and more people have started shopping online because of perceived usefulness, convenience, ease of use, product selection, competitive prices, control, and enjoyment (Cheung et al., 2005; Günüç & Keskin, 2016). Consequently, nowadays most of the population prefers shopping online via using e-retail web sites instead of purchasing offline (Rose & Dhandayudham, 2014).

There is strong empirical evidence suggesting that, with the prevalent use of internet technologies in retailing, shopping addiction is now occurring in online context (Rose &

Dhandayudham, 2014). In fact, many people used internet to shop during the pandemic (Moon et al., 2021). Online shopping is much more attractive for shopping addicts to buy things using websites and applications instead of offline shops given (i) the independence from time and space; (ii) the ability to disguise their identity during shopping; (iii) providing much more choices than offline platforms can offer; and (iv) the ability to browse and purchase on one's own speed (Wang et al., 2022; Zheng et al., 2020). Shopping provides mood modification for shopping addicts that help them achieve successful avoidance of negative affective states including boredom, depression, stress, and loneliness, by having positive emotions including entertainment, relaxation, happiness, and enjoyment (Günüç & Keskin, 2016).

The epidemiological studies in the last two decades support the notion that the real-life compulsive buyers can easily become online shopping addicts with the aforementioned facilities provided by online platforms (Keskin & Günüç, 2017). Empirical research has reported varying prevalence rates of shopping addiction ranging between 1.1% and 20% (Dittmar, 2005; Koran et al., 2006; Maraz et al., 2015; Mueller et al., 2010; Otero-López & Villardefrancos, 2014). A recent meta-analysis study that investigated 40 empirical studies concluded that the mean prevalence rate of shopping addiction was 4.9% in adult representative studies and 12.3% in adult non-representative samples (Maraz et al., 2016). However, the aforementioned studies did not differentiate between shopping addiction and online shopping addiction. The studies that have examined online shopping addiction in specific reported prevalence rates range between 12.6% and 33.6% (Duroy et al., 2014; Ko et al., 2020; Müller et al., 2019; Trotzke et al., 2015). The varied results of these studies are associated with the different sampling methods used (e.g., representative samples, clinical samples, university students, and general population) and different countries and cultures of the participants.

Nevertheless, it is evident that online shopping addiction is an important global health problem (Müller et al., 2022). Compulsive shoppers often suffer from poor self-esteem and marked

distress, and commonly have comorbid conditions such as anxiety disorder, obsessive-compulsive disorder (OCD), other impulse control and personality disorder (Black 2022; Mrad & Cui, 2020). Research suggests that some people do shopping because they want to fill a void. Consequently, given the financial and mental health consequences online shopping addiction including anxiety, depression, negative emotions, and disordered eating (Müller et al., 2019; Wang et al., 2021), online shopping addiction can be referred as another important technology-related behavioural addictions that needs further academic attention.

1.2.5 Online gambling addiction

A large amount of empirical research on the distinctive and similar features of problematic gambling behaviour and substance abuse led to the inclusion of gambling disorder as a distinct disorder in a new category of Non-Substance Behavioural Addiction in the fifth edition of the DSM-5 (APA, 2013). APA officially classified gambling disorder as an addiction for the first time. According to APA, individuals who present four out of nine symptoms should be classified as disordered gamblers. These symptoms include (i) preoccupation with gambling; (ii) tolerance with gambling (betting increasing amount of money to feel satisfied); (iii) repeated failures in controlling and/or quitting gambling; (iv) withdrawal (feeling negative emotions when attempting to quit gambling); (v) experiencing negative consequences of gambling in different aspects of life functioning; (vi) escaping negative feelings and thoughts using gambling; (vii) trying to regain gambling-related losses via gambling again; (viii) deceiving others about gambling; and (ix) relying on others to fund gambling (APA, 2013).

The official recognition of disordered gambling as a behavioural addiction resulted in using gambling disorder as a ‘blueprint’ to investigate and identify other excessive behaviours as specific addictive disorders (Griffiths, 1996). Consequently, internet gaming disorder was recognized by APA as a separate behavioural addiction as a result of empirical evidence that

suggested that in fact online gaming addiction has unique characteristics and consequences and should be separated from internet addiction (Griffiths, 2010). Nevertheless, scholars argue that online gambling addiction also warrants distinct consideration (Dowling, 2014).

With the developments of online technologies, internet platforms started to facilitate gambling in the mid-1990s and become an important medium that provides gambling opportunities for individuals (Griffiths, 1996). Online gambling can be described as gambling that is carried out interactively and remotely using internet technologies on online-enabled devices including smartphones, tablets, laptops and computers (McCormack & Griffiths, 2012). Some studies suggest that online gambling behaviour can be more out-of-control and addictive than traditional in-person gambling due to the facilities provided by internet technologies, including the ability to (i) conduct gambling in private as an automated activity; (ii) conduct gambling at any location without time limitation; and (iii) place bets and wagers and receive notification of outcomes via internet technologies (McCormack et al., 2013). Furthermore, some empirical evidence supports the notion that online gambling is more accessible when compared to traditional gambling which makes online gambling more susceptible to the development and exacerbation of gambling-related problems (Adams et al., 2007; Effertz et al., 2018; LaPlante & Shaffer, 2007; Lozano & Rodriguez, 2022; Watson et al., 2004). However, some other studies could not find a significant difference between online gambling and land-based gambling in terms of disordered gambling and negative outcomes (Calado & Griffiths, 2016).

One nationally representative study in Great Britain found that only 2% of gamblers were ‘pure’ online gamblers (i.e., only gambling online) compared to 80% who had only gambled offline, and 18% who gambled both online and offline (Wardle et al., 2011). Some studies indicate that mixed mode gambling (e.g., gambling in both offline and online contexts) can be more addictive, problematic, and dangerous when compared to online gambling (Wardle et al., 2011). Wardle et al. showed that the majority of online gamblers were also offline gamblers

and these mixed mode gamblers had the highest rates of problem gambling prevalence rates (Wardle et al., 2011). While 4.3% of the mixed mode gamblers had problem gambling, none of the online gamblers had problem gambling whereas 0.9% of the in-person gamblers had problem gambling (Wardle et al., 2011). Therefore, it is important not to ignore how people integrate online and offline gambling behaviours and that almost all published studies make direct comparisons between online and offline gamblers by including anyone who gambles online as an ‘online gambler’ even though most of them also gamble offline.

Consequently, given the possibilities provided by internet technologies (e.g., being able to place big bets and wagers, fast access to different betting options, uninterrupted gambling, high-speed feedback) and that some forms of gambling have developed in social media platforms, this also makes gambling very accessible to young people (Akbari et al., 2022). Consequently, scholars have increasingly focused on online gambling addiction and its association with gambling disorder (Gainsbury & Wood, 2011). However, the answer to the question of whether online gambling or in-person gambling is more harmful and dangerous for gamblers is yet to be established, but online gambling addiction remains to be one of the important technology-related behavioural addictions that needs further academic attention (Auer & Griffiths, 2022; Griffiths et al., 2011; Hing et al., 2015; Kairouz et al., 2012; Mazar et al., 2020).

1.2.6 Online pornography addiction

Pornography can be defined as texts and images designed to produce sexual arousal (Allen et al., 2017). More recently, pornography has been referred to as any sexually explicit material intended to induce sexual arousal (Grubbs et al., 2020). Today, there are more than 400 million pornographic websites and individuals can access pornographic content at any time and in any type thanks to internet technologies (Perry, 2018). This facilitation brings about the potential of pornography abuse as well as problematic and addictive use of pornography. Over the past

few decades, research into excessive and/or compulsive pornography use has markedly grown. However, there is no consensus over how problematic pornography viewing should be referred to. Consequently, pornography addiction has not been able to gain official recognition and/or conceptualization as a distinct disorder by APA or WHO.

Due to the lack of common view and definition of pornography addiction, different terms have been used in the literature to express the concept of uncontrolled pornography use including dysregulated pornography use, compulsive pornography use, addictive pornography use, pathological pornography use, problematic pornography use, and internet pornography addiction (Ballester-Arnal et al., 2022; Brand et al., 2019; Fernandez et al., 2017; Kohut & Štulhofer, 2018). Despite the differences in terms of the conceptualization of pornography addiction, a large amount of empirical evidence suggest that pornography addiction is a problematic behaviour that has important adverse consequences and detrimental effects on individuals' psychological and physical health especially among adolescents (Bóthe et al., 2021; Setyawati et al., 2020). However, some scholars consider intense involvement with pornography use as one of the signs of sex addiction (Andreassen et al., 2018). Despite pornography addiction's overlap with sex addiction, researchers have investigated it as a separate behavioural addiction to obtain deeper knowledge and understanding on the concept (Ross et al., 2012; Voros, 2009).

With the development in internet technologies, engagement in pornography viewing has increasingly become one of the addictive online behaviours with online platforms' facilitation of easy accessibility, affordability, and anonymity (Griffiths, 2012; Ross et al., 2012). Scholars describe online pornography addiction as uncontrolled and compulsive use of sexually pornographic internet material to a degree that it results in adverse physiological, psychosocial, and mental problems in individuals' lives (Spenhoff et al., 2013). Consequently, online pornography addiction has become a clinically relevant phenomenon (Kafka, 2010). The

epidemiological studies indicated ranging ratios of males (between 5% and 21.95%) and females (between 1.46% and 3%) that struggle with online pornography addiction (Baranowski et al., 2019; Bóthe et al., 2018; Chen et al., 2021; Kuzma & Black, 2008; Praveera et al., 2021; Ross et al., 2012). More generally, approximately 11% of individuals have been identified as being at risk for pornography addiction on average (Grubbs et al., 2020; Grubbs et al., 2019; Kraus et al., 2020). However, some other studies have found rates of pornography addiction ranging from 0.1% to 13%, which emphasises the struggles to have consistent assessment criteria for pornography addiction (Wéry & Billieux, 2017). Nevertheless, online pornography addiction is another technology-related behavioural addiction that needs further research attention. The next section investigates the theoretical models used to investigate specific and unspecified/general internet addictions.

1.3 Theoretical models

The number of studies that have investigated technology-related behavioural addictions has grown substantially over the past two decades with the rapid developments in internet and mobile phone technologies. Researchers have been trying to examine and understand the underlying mechanisms of these behavioural addictions using theoretical assumptions and models. There have been several theoretical models and frameworks that were developed and adopted to investigate technology-related behavioural addictions. The next sections outline three of the most commonly used models that have been helpful for gaining deeper knowledge on the measurement, correlates, and outcomes of technology-related behavioural addictions. Namely, the components model of addiction (CMA; Griffiths, 2005), the compensatory internet use model (CIUM; Kardefelt-Winther, 2014), and the interaction of person-affect-cognition-execution (I-PACE) model (Brand et al., 2016).

1.3.1 Components model of addiction (CMA)

It has been claimed that all addictions develop as a result of biopsychosocial processes along with situational and structural factors (Kuss et al., 2014). Therefore, all types of addictions share a large number of commonalities in which studies can focus on the common features of different types of addictions in order to have a core set of criteria that will help gain better understanding and conceptualization of addictive behaviours (Griffiths, 2017, 2019). The CMA posits that all addictions comprise several distinct core components: salience, tolerance, mood modification, withdrawal, relapse, and conflict (Griffiths, 2005). *Salience* refers to preoccupation with the behaviour to a degree that a particular activity becomes the most important activity in an individual's life. *Mood modification* refers to the use of the behaviour in attempts to avoid negative feelings and gain positive feelings as well as making oneself feel better. *Tolerance* refers to the need for increased engagement in the behaviour in order to achieve the former mood-modifying effects. *Withdrawal* refers to psychological distress and physical effects that occur when an individual stops engaging in a particular behaviour and/or reduces engaging in an activity. *Relapse* refers to the failed attempts to reduce/stop a particular behaviour which usually results in increased engagement on the activity. *Conflict* refers to experiencing detrimental impact on one's social, psychological, and/or professional life as a result of excessive engagement in a particular activity (Griffiths, 2005).

Consequently, the CMA claims that the components used to identify substance use-related addiction could be adopted to determine addictive behaviours both in online and offline contexts (Griffiths, 2005). It has been argued that rather than using idiosyncratic criteria via focusing on the differences of addictive symptoms, the best way to unify the behavioural addiction field was adopting the confirmatory approach (i.e. the CMA) to identify different addictive behaviours in online and offline contexts (Griffiths, 2019). Some researchers argued that focusing on the similarities instead of unique features of the behaviours would result in

overpathologizing of everyday behaviours as well as misconception of behavioural addictions (Kardefelt-Winther et al., 2017). However, a large number of empirical examinations support the notion that the CMA has effective criteria that can be used to assess and identify different addictive behaviours (Griffiths, 2019).

Many offline behavioural addictions have been assessed using the psychometric instruments that were developed adopting the CMA. These include food addiction, exercise addiction, gaming addiction, work addiction, study addiction, shopping addiction, sex addiction, love addiction, dance addiction, tanning addiction, pornography addiction, and problematic television series watching (Andreassen et al., 2012; 2015; 2018; Atroszko et al., 2015; Costa et al., 2021; Kircaburun et al., 2020; Lemmens et al., 2009; Ley et al., 2014; Maraz et al., 2015; Orosz et al., 2016; Terry et al., 2004). The CMA has also been used to develop assessment tools that assess technology-related and/or online behavioural addictions. These include internet addiction, social media addiction, *Facebook* addiction, *YouTube* addiction, *Instagram* addiction, problematic pornography consumption (predominantly online), *Tinder* addiction, online gambling addiction, QQ addiction, and smartphone addiction (Andreassen et al., 2016; Andreassen et al., 2012; Balakrishnan & Griffiths, 2017; Bóthe et al., 2018; Csibi et al., 2021; González-Cabrera et al., 2020; Kircaburun & Griffiths, 2018a; Kuss et al., 2014; Liu et al., 2021; Orosz et al., 2016; Yurdagül et al., 2021).

Consequently, the CMA has repeatedly been confirmed to be useful for assessing and investigating different addictive behaviours among different cultures and demographic groups, and empirically proved its viability when examining behavioural addictions and providing definitional, conceptual and diagnostic implications for general public as well as health professionals (Kuss et al., 2014).

1.3.2 Compensatory internet use model (CIUM)

The CIUM was proposed by Kardefelt-Winther (2014) as a result of observations made on empirical evidence and compensatory potential of media use. The CIUM posits that negative life situations may motivate individuals to use the internet to diminish negative feelings (Kardefelt-Winther, 2014). For instance, someone with low interpersonal communication skills may feel lonely in real-life and engage in online social interaction using internet platforms. As a result, if an individual can successfully compensate for real-life social needs via the internet, this person may become an addictive user of the internet in repeated attempts to deal with his needs (Kardefelt-Winther, 2014). Similarly, the constant use of the internet in order to fulfil other offline needs may result in the repeated use of internet technologies which may transform into addictive online behaviours. Consequently, Kardefelt-Winther suggested that the associations among motivations and psychosocial well-being should be empirically examined in terms of internet addiction in order to understand the direct, indirect, interacting, and underlying factors associated with addictive online behaviours.

The CIUM has been popularly used by behavioural addiction researchers as a theoretical framework in empirical studies that have examined the direct and indirect relationships of motivational and psychosocial factors with regard to online gaming addiction, social media addiction, internet addiction, smartphone addiction, and online pornography addiction (Awan et al., 2021; Di Blasi et al., 2020; Hernández et al., 2019; Kircaburun et al., 2020; Kircaburun et al., 2018; Kuss et al., 2017; Nikbin et al., 2022; Snodgrass et al., 2018; Tosuntaş et al., 2020; Wang et al., 2015; Wéry et al., 2020; Wolniewicz et al., 2020). Consequently, the empirical studies support the notion of the CIUM that using internet to compensate real-life unattained needs results in using addictive online behaviours as a maladaptive coping strategy to deal with real-life problems, and in turn, successful and repeated attempts lead to experiencing more real-

life problematic outcomes in the long run due to excessive and uncontrolled engagement in online platforms (Kuss et al., 2017; Yurdağül et al., 2021).

1.3.3 Interaction of Person-Affect-Cognition-Execution (I-PACE) model

The I-PACE model posits that there are several components that contribute to the development of specific addictive online behaviours, such as an individual's core characteristics (e.g., personality, social cognitions, psychopathology, specific motives for engaging in a behaviour, and biopsychological constitution), subjectively perceived situations (e.g., being exposed to addiction-related factors, negative mood, and personal conflicts), and affective responses (e.g., coping style and Internet-related expectancies), and gratifications (Brand et al., 2016). According to I-PACE model, even though some personality traits have consistently been found to relate with problematic use and addiction (e.g., high neuroticism, impulsivity and shyness, low conscientiousness and self-esteem, high narcissism and antisocial personality traits; Griffiths, 2017; Kayaş et al., 2016; Kircaburun & Griffiths, 2018a; Sindermann et al., 2018), specific personality profiles are related to different types of internet-use disorders and therefore it is important to investigate common and unique relationships between problematic use of specific applications and different personality constructs (Brand et al., 2016).

Similarly, some psychological and mental health problems have consistently been shown to coexist and/or correlate with different addictive online behaviours (e.g., depression, anxiety, psychological distress, negative affective states, loneliness; Emirtekin et al., 2019; Kircaburun et al., 2020). Nevertheless, it is of great importance to examine common and unique associations of different addictive online behaviours with psychological and mental health problems (Brand et al., 2016). Furthermore, the I-PACE model also suggests that the aforementioned components of the I-PACE model may play mediating and moderating roles among each other. Therefore, investigating direct, indirect, and interaction effects of these factors with different addictive online behaviours would help understand the underlying

mechanisms that lead to the development and maintenance of different addictive online behaviours (Brand et al., 2016).

The I-PACE model is one of the most frequently cited theoretical frameworks that is used to investigate technology-related behavioural addictions (Brand et al., 2019). Using the I-PACE model, several studies have explained influences of various factors on different types of addictive behaviours including online gaming addiction (Li et al., 2018; Zhou et al., 2019), online social networking addiction (Süral et al., 2019; Wegmann et al., 2017), online sex addiction (Carnes & Love, 2017; Strahler et al., 2018; Wéry et al., 2018), *WhatsApp* addiction (Rozgonjuk et al., 2020), *Instagram* addiction (Kircaburun & Griffiths, 2019), *Facebook* addiction (Rozgonjuk et al., 2020), online video watching addiction (Yang et al., 2021), *Snapchat* addiction (Rozgonjuk et al., 2020), general internet addiction (Carbonell et al., 2018; Emelin et al., 2017; Lachmann et al., 2018; Vargas et al., 2019), smartphone addiction (Marciano et al., 2021), gambling addiction (Ioannidis et al., 2019; Starcke et al., 2018), and online shopping addiction (Heffernan et al., 2022; Lam & Lam, 2017; Vogel et al., 2018).

With the frequent use of the I-PACE model in empirical research, researchers revised and updated the model in the light of new empirical evidence (see Brand et al., 2019 for the revised model). Accordingly, general predisposing variables (i.e. genetics, early childhood experiences, psychopathology, temperamental features, general coping style) and behaviour-specific predisposing variables (i.e. specific needs, specific motives, specific values) comprised the person's core characteristics stage of the revised I-PACE model (Brand et al., 2019). The second stage was the stabilisation and intensification of the behaviour which included (i) perception of external and internal triggers, (ii) affective and cognitive responses to triggers, (iii) cue-reactivity and craving, (iv) reward expectancies and specific coping style, (v) decision to behave in a specific way, and (vi) gratification and compensation (Brand et al., 2019). Therefore, the combination and interaction of these variables in first and second stages leads

to the development and maintenance of specific addictive behaviours with the symptoms of diminished control over the behaviour and negative consequences in daily life (Brand et al., 2019). Consequently, the I-PACE model provides a highly useful theoretical framework that describes the processes of addictive online behaviours by combining psychological and neuroscientific theories of substance-use disorders and behavioural addictions (Brand et al., 2019).

1.4 Addictive mukbang watching as a behavioural addiction

The psychological literature on why individuals watch mukbang and how watching mukbang affects them is scarce. A qualitative empirical study analysed the comments of viewers of a male South Korean mukbanger and concluded that watching mukbang alleviated viewers' real life loneliness and social isolation by making them feel emotionally connected to other viewers and the mukbanger (Choe, 2019). Other content analytic studies have argued that mukbang viewers obtain a sense of relief and pleasure from listening to eating sounds such as chewing and devouring noises (Woo, 2018). Some individuals watch mukbang in order to see young attractive women consume food (i.e., to provide some kind of sexual fantasy; Donnar, 2017), whereas others simply seek entertainment (Choe, 2019). However, these results may be culturally sensitive because there are cultural differences surrounding the eating norms and attitudes toward mukbang (Higgs, 2015; Pereira et al., 2019). Nevertheless, some people appear to escape from real-life problems and negative feelings through watching mukbang (Bruno & Chung, 2017), whereas mukbang provides some viewers with the vicarious pleasure of eating the desired and fantasised food so that they could avoid actually eating the food (i.e., watching mukbang as a dieting tool) (Donnar, 2017).

As aforementioned, individuals watch mukbang with different motivations and aims. Therefore, given the recreational aspects of mukbang watching, not all of the mukbang

watchers can be considered pathological viewers. Accordingly, to date, mukbang watching has not been considered an addictive online behaviour. However, a small group of mukbang viewers may be at risk for addictive use just as some individuals that engage in other online activities turn into addictive users of those particular activities in time (as summarised in previous sections). Consequently, in order to examine the addictive nature of mukbang watching behaviour, it is important to first focus on the real-life extension of this online behaviour. Therefore, the next sections focus on food addiction and eating disorders.

1.4.1 Food addiction

Eating is an essential part of human lives and particular foods have strong rewarding impacts on individuals similar to drugs (Volkow et al., 2012). Some individuals develop addiction-like symptoms for eating food, including diminished control, tolerance, withdrawal, and impairment in daily functioning (Schulte et al., 2017). There is an ongoing debate regarding the conceptualization of food addiction. Some scholars argue that individuals are addicted to specific types of food (i.e. high calorie, oily, and sugary foods) and demonstrate substance-use addiction symptoms (Şengör & Gezer, 2019), whereas others claim that food addiction is some type of behavioural addiction in which a person is mostly addicted to the eating behaviour itself rather than the food (Hebebrand et al., 2014; Schulte et al., 2017). However, the general view expressed in the literature is that food addiction is similar to substance addiction which manifests itself with neurochemical effects in the brain, rather than a behavioural addiction (Ziauddeen & Fletcher, 2013; Ziauddeen et al., 2022).

The concept of food addiction was first associated with alcohol addiction in order to form a definition that describes the addictive potential of calorie intake and consumption of processed foods over time (Randolph, 1956). Researchers who associate food addiction with substance-use addiction argue that palatable foods stimulate reward-related activity in the striatum, which is known to be affected by drugs (Yokum et al., 2014). In addition to the striatum, the activity

of other brain regions thought to play an important role in drug addiction, such as prefrontal cortical regions and the amygdala, is similarly altered by palatable food consumption (van Bloemendaal et al., 2014). Consequently, researchers that explain the addictive nature of food consumption with chemical changes in the brain classify food addiction as a physical and psychological dependency to consumption of foods that contain elevated levels of fat, carbohydrate, and sugar (Michener & Rozin, 1994; Smith & Robbins, 2013). However, it should be noted that food addiction has not gained official recognition by organisations such as APA and WHO.

According to the findings from empirical studies, the most common symptom of food addiction is the unsuccessful efforts to reduce or control eating (Flint et al., 2014). Other commonly reported symptoms, particularly among individuals with obesity, comprise (i) continuing to eat despite physical or psychological problems, (ii) tolerance, (iii) significant withdrawal from daily activities, and (iv) withdrawal symptoms when not consuming food (Eichen et al., 2013; Gearhardt et al., 2012; 2013). Similarly, the reported symptoms of food addiction (from the most frequently reported symptom to the least respectively) in adolescents have been reported to be: (i) not being able to stop eating, (ii) giving up important activities due to excessive eating, (iii) tolerance, (iv) withdrawal, and (iv) continuing eating despite problems (Gearhardt et al., 2013; Meule & Gearhardt, 2014).

Irrespective of the varied definitions and conceptualization of food addiction, there have been a large number of epidemiological studies investigating the prevalence of food addiction using varied samples and study groups. Among adults seeking treatment for weight loss and obesity, the prevalence of food addiction has ranged between 6.7% and 15% in different studies (Chao et al., 2017; Eichen et al., 2013). In a Spanish study, 72.8% of a clinical sample presenting with eating disorders were reported as having food addiction (Granero et al., 2014). In another study, 38% of 100 adult women who were medically classified as overweight and/or obese in Turkey

were reported to be food addicts (Özkan et al., 2017). A larger Turkish study (N= 2,494) reported 2.3% of the participants as having the risk for addictive food consumption (Kircaburun et al., 2020). Among non-clinical samples, the prevalence rate of food addiction has ranged between 4.3% and 6.7% in different studies (Nunes-Neto et al., 2018; Pedram et al., 2013). The prevalence of food addiction was 7.9% in a representative German sample, 15% among the American community (Hauck et al., 2017; Schulte & Gearhardt, 2018), and 2.6% among Dutch adolescents (Mies et al., 2017). The different results across these studies are likely due to the varied samples used from different parts of the world and age groups. Nevertheless, despite the reported variations in prevalence rates, a group of individuals consistently perceive themselves as food addicts. Given the adverse health outcomes of food addiction including depression, disordered eating, obesity, non-suicidal self-injury, suicide attempts, and mortality (Kakoschke et al., 2018; Keski-Rahkonen & Mustelin, 2016; Schmidt et al., 2016), food addiction constitutes an important health risk for young people and the general community.

Empirical studies have identified several correlates and comorbidities associated with food addiction. The highly overlapping constructs of food addiction, disordered eating, and compulsive overeating have been shown to share behavioural similarities as well as neural and psychological correlates (Davis, 2017; Gearhardt et al., 2011). It has been reported that individuals diagnosed with food addiction risk show higher depression and anxiety rates (Burmeister et al., 2013; Meule et al., 2012; Ünal et al., 2017). Major depression, generalised anxiety disorder, and social anxiety disorder are also comorbidities that have been associated with food addiction (Vardar & Erzenin, 2011). Furthermore, food addiction has been positively associated with psychiatric distress, interpersonal sensitivity, reward dysfunction, emotion dysregulation, craving, impulsivity, and hostility (Burrows et al., 2017; Nunes-Neto et al., 2018; Schulte et al., 2016). It appears that individuals use addictive food consumption as a maladaptive coping mechanism to deal with their psychological and psychosocial problems.

In addition, greater attention deficit hyperactivity disorder has been reported among individuals with food addiction when compared to healthy controls (Lent et al., 2014). Faster brain activations and faster response to food stimuli have been associated with impulsivity among adolescents presenting with food addiction (Clark & Saules, 2013; Meule & Kübler, 2012). Food addiction has also been associated with a higher frequency of binge eating and impulsivity among adults (Meule et al., 2017). Studies have repeatedly emphasised the importance of mood and emotional states on food addiction by reporting the exacerbating role of positive and negative affect along with psychiatric distress on food addiction (Babayiğit et al., 2013; Meule et al., 2012; Sevincer et al., 2016). Similarly, the ability to identify and describe feelings and emotions are also important preventive factors for individuals that diminish the risk of development and maintenance of food addiction (Brunault et al., 2018). Existing empirical studies appear to emphasise the important preventive and elevating role of emotional and psychological factors on food addiction, as well as the overlapping psychopathological symptoms with food addiction.

Moreover, food addiction has been associated with specific personality traits. For example, high emotional instability, high impulsive traits, low conscientiousness, and high introversion have been associated with the elevated risk of having food addiction (Brunault et al., 2018), indicating that individuals with more neurotic and impulsive traits and with less self-control and social skills are more vulnerable to compulsive overeating as a maladaptive coping and becoming addicted to food (Kircaburun et al., 2020). Individuals with elevated rash impulsivity are more at risk for developing food addiction (Waxman, 2009). Food addicts have been reported to use more calming and distracting strategies to control their negative emotions than healthy controls (Omar et al., 2016). Furthermore, those with more novelty seeking, harm avoidance, and self-transcendence, and with less self-directedness and less cooperativeness have demonstrated elevated food addiction (Omar et al., 2016). Consequently, empirical

studies indicate that focusing on and investigating mental, emotional, and personality features of individuals is an effective way to understand the underlying mechanisms that lead to the development and maintenance of food addiction.

1.4.2 Eating disorders

Eating disorders are one of the most fundamental and rising health problems in today's society that reduces life quality and can result in death (Ágh et al., 2016; Arcelus et al., 2011; Castejón Martínez & Berengüí Gil, 2019; Dejong et al., 2013; Galmiche et al., 2019; Kostro et al., 2014). For most people, eating is an automatic response to hunger, as easy and normal as breathing. On the other hand, this can be a very challenging area for people with eating disorders (Okumus et al., 2021). Eating disorders cover all disorders with regard to unhealthy eating behaviours (Toker & Hoccoğlu, 2009). In general, eating disorders can be referred to as a disease in which various conditions are effective for its development and tends to occur during adolescence and maintain and/or relapse during adulthood (Castellini et al., 2016; Maner & Aydın, 2007). Individuals' obsession in their appearance and weight, losing or gaining weight via pathological eating habits, and deterioration of health as a result of the aforementioned weight changes can be called disordered eating (Troisi et al., 2005). In the DSM-5, the APA (2013) defined eating disorders as having *“a persistent disturbance of eating or eating-related behaviour that results in the altered consumption or absorption of food and that significantly impairs physical health or psychosocial functioning”* (p. 329).

Eating disorders have been under academic investigation since late 1800s (Thomas et al., 2009) with the identification of anorexia nervosa (e.g., self-starvation) and bulimia nervosa (e.g., binge-purge cycle) as the first generation of eating disorder classification (Gull, 1874; Laségue, 1873; Russell, 1979), as well as the later descriptions of binge eating disorder and night eating syndrome (Stunkard, 1959; Stunkard et al., 1955). However, the official recognition of eating

disorders was made by the APA in 1980 with the inclusion of anorexia nervosa (AN), bulimia nervosa (BN), and eating disorder not otherwise classified (EDNOS) in the third edition of the DSM (Thomas et al., 2009). As a result of a large number of case studies and empirical studies, the official definitions and conceptualization of eating disorders have been updated several times. Consequently, the APA lists six eating disorders (i.e., pica, rumination disorder, avoidant/restrictive food intake disorder, anorexia nervosa, bulimia nervosa, and binge-eating disorder) in the DSM-5 in the ‘Feeding and Eating Disorders’ section (APA, 2013).

1.4.3 Pica

Pica is the first eating disorder listed by APA in the DSM-5. Pica is defined as the consumption of non-nutritive substances (e.g., hair, cloth, wool, string, chalk, soap, talcum powder, paper, gum, paint, pebbles, metal, clay, ash) regularly for at least one month that leads to impairment in daily functioning (APA, 2013). Pica can cause serious clinical health problems for individuals including bowel problems, intestinal obstruction, intestinal perforation, infection, poisoning, and death (APA, 2013). Various nutritional, sensory, physiologic, neuropsychiatric, cultural, and psychosocial theoretical models are described to explain pica (Sayetta, 1986). The sensory and physiologic theories center on the finding that many patients with pica say that they just enjoy the taste, texture, or smell of the item they are eating (Rose et al., 2000). Neuropsychiatric approaches postulate that pica might be associated with disorders in certain brain lesions (Sayetta, 1986). From the psychosocial perspective, pica has been associated with family stress and a smaller social support network (Edwards et al., 1994).

Empirical examinations have identified several correlates and factors that result in the development of pica including emotional and mental health problems (e.g., trauma, maternal deprivation), major depression disorder, obsessive-compulsive disorder, schizophrenia, pregnancy, and childhood (Bhatia & Gupta, 2009; Sharma et al., 2021). Epidemiological studies on pica are limited and inconclusive (APA, 2013). However, a Swiss study that was

conducted with 1,430 children reported a 3.8% prevalence rate for pica disorder (Murray et al., 2018). Nevertheless, in most cases, pica is seen to be more prevalent among individuals with autism spectrum disorder and/or intellectual disability (APA, 2013).

1.4.4 *Rumination disorder*

Rumination disorder is another eating disorder. Rumination disorder is conceptualised by APA (2013) as an individual's frequent (e.g., several times a week, typically daily) regurgitation of food with subsequent reswallowing, rechewing, and/or spitting out of the food that was regurgitated. In order for this behaviour to be classified as a disorder, it has to continue on a regular basis at least for a month (Murray et al., 2018). Rumination disorder may begin at infancy, childhood, adolescence, or adulthood (Fredericks et al., 1998). Scholars have examined rumination disorder through the lens of physiological, psychiatric, and behavioural theoretical perspectives. From physiologic aetiology, rumination disorder may be related to physiological problems in related parts of the body including laryngeal, oesophageal dysfunction, and/or gastro-oesophageal reflux (Fredericks et al., 1998). From the psychiatric perspective, rumination disorder has been considered by scholars to be associated with psychological distress, mental retardation, and/or psychopathology (Amarnath et al., 1986). Nevertheless, rumination disorder may be explained with the combination of the aforementioned theoretical underpinnings (Fredericks et al., 1998).

Epidemiological studies on rumination disorder are limited and inconclusive (Hartmann et al., 2012). However, a Swiss study that was conducted with 1,430 children reported a 1.7% prevalence rate for rumination disorder at a clinical cut-off score (Murray et al., 2018). The prevalence of rumination disorder among 2,163 SriLankan children whose ages ranged between 10 and 16 years was 5% (Rajindrajith et al., 2012). Rumination disorder has important adverse health consequences in all age groups, including dysfunctions in social life, pathological weight loss, as well as development and learning problems in childhood and

adolescence (Dinkler & Bryant-Waugh, 2021). Rumination disorder has been reported to be associated with depression, anxiety, and psychosocial stressors and co-occur with generalised anxiety disorder (APA, 2013; Raha et al., 2017).

1.4.5 Avoidant/restrictive food intake disorder

Another type of disordered eating is avoidant/restrictive food intake disorder (ARFID). ARFID is conceptualised as the avoidance and restriction of food intake to an extent that results in failure to meet nutrition requirements or insufficient energy intake (APA, 2013). ARFID is motivated by sensory sensitivity, fear of aversive consequences and/or lack of interest in food or eating (Brigham et al., 2018). Recent conceptualisations propose that neurobiological and neurobehavioural mechanisms may underpin the onset and maintenance of ARFID presentations. One of the models suggests that biological abnormalities in fear responsiveness, homeostatic appetite, and sensory perception, comprise the three common aggravators of ARFID (i.e. sensory based avoidance, lack of interest in food or eating, and concern about aversive consequences of eating) (Thomas et al., 2017). ARFID symptoms may include significant weight loss, significant nutritional deficiency, dependence on enteral feeding or oral nutritional supplements, or distortion of psychosocial functioning (APA, 2013).

ARFID may develop during infancy, early childhood, or during adolescence and persist into adulthood (Feillet et al., 2019). The prevalence of ARFID can be as high as 3% in the general population (Feillet et al., 2019). Social functioning and physical health are adversely affected by ARFID among older children, adolescents, and adults (APA, 2013). Furthermore, ARFID has been associated with adverse outcomes especially with poor mental health-related life quality and functional impairment (Hay et al., 2017). ARFID is as prevalent as other common eating disorders in all ages including anorexia nervosa and bulimia nervosa (Brigham et al., 2018). ARFID has been associated with anxiety disorders, autism spectrum disorder,

obsessive-compulsive disorder, attention-deficit/hyperactivity disorder, and familial anxiety (APA, 2013). However, ARFID mainly manifests itself among children with anxiety disorders (Feillet et al., 2019).

1.4.6 Anorexia nervosa

Anorexia nervosa is also one of the eating disorders that threatens public health. Anorexia nervosa is described by APA (2013) as experiencing persistent energy intake restriction, intense fear of gaining weight, and impairment in self-perceived body image (e.g., body weight or shape). Individuals who suffer from anorexia nervosa tend to have body weight below the healthy threshold determined by global health officials including the Centers for Disease Control and Prevention (CDC) and the WHO (APA, 2013). Anorexic individuals always fear weight gain and/or are anxious about their specific body parts being too fat (Hay & Touyz, 2018). Therefore, they try to control their energy intake by eating very small portions of food and/or self-induced vomiting to the point of semi-starvation (Solmi et al., 2021). There are several theoretical assumptions used to understand the development and maintenance of anorexia nervosa including neurobiological, socio-cultural, psycho-social, schema therapy, and integrative models (Munro et al., 2016). While neurobiological models focus on the underlying genetic contribution (i.e. dysregulated emotional processing) to distortion of individual body image, and to the onset of anorexia nervosa (Lipsman et al., 2013), socio-cultural and psycho-social models are more interested in explaining anorexia nervosa with the influence of society on the perception of one's appearance (e.g., imposed unrealistic thin ideal body; Riva, 2014) and one's self perception of their image (e.g., perfectionism, low self-esteem, mood intolerance; Treasure & Schmidt, 2013).

According to epidemiological studies, anorexia nervosa is much more prevalent among females when compared to males, and approximately 4% of females and 0.3% of males have been

diagnosed with lifetime anorexia nervosa (van Eeden et al., 2021). Furthermore, adolescents and young adults are at most risk for the development and onset of anorexia nervosa (APA, 2013). However, anorexia nervosa has been reported to be present among males and females from all ages across the world (van Eeden et al., 2021). Anorexia nervosa can lead to many life threatening health consequences including major organ failures, physiological disturbances, loss of bone mineral density, depressive symptoms (e.g., depressed mood, social withdrawal, irritability, and insomnia), obsessive compulsive features, other psychosocial problems (e.g., feelings of ineffectiveness, inflexible thinking, limited social spontaneity, highly restrained emotional expression), physical problems due to excessive exercising, significant social isolation, failure to fulfil career potential, suicide ideation, and suicide (APA, 2013; Mitchell & Crow, 2006). There are different etiological factors that lead to anorexia nervosa including temperamental factors (e.g., anxiety disorders, obsessional traits), environmental factors (e.g., occupations that encourage thinness such as modelling and elite athletics), physiological factors (familial bipolar and depressive disorders, brain abnormalities), comorbidities (e.g., major depressive disorder, schizophrenia, substance use disorders, social anxiety disorder, ARFID) and sociodemographic factors (APA, 2013; Treasure et al., 2020).

1.4.7 Bulimia nervosa

Bulimia nervosa is another eating disorder that possesses elevated health risk for individuals that meet the diagnostic criteria. According to APA (2013), individuals who meet four criteria should be classified as having bulimia nervosa disorder. The criteria include (i) repetitive binge eating episodes, (ii) repetitive pathological weight-compensatory attempts (e.g., purging, self-induced vomiting, misuse of medications, fasting, excessive exercising) to prevent weight gain, (iii) binge eating and compensatory behaviours both occur at least once a week for three months, (iv) having distorted perception of body image and weight gain. Individuals who suffer from bulimia nervosa tend to have a normal body weight or slightly above the healthy threshold

determined by the CDC and WHO (APA, 2013). According to epidemiological studies, bulimia nervosa is much more prevalent among females when compared to males, and approximately 2.6% of females and 1.2% of males have been diagnosed with lifetime bulimia nervosa (Bagaric et al., 2020). Furthermore, adolescence and young adulthood are the most risky periods for the peaking of bulimia nervosa (Dejong et al., 2013). However, bulimia nervosa can occur among males and females from all ages across the world (van Eeden et al., 2021).

Bulimia nervosa has several adverse health consequences including physical problems (e.g., menstrual irregularity, fluid and electrolyte disturbances, mortality due to heart failure, cardiac and skeletal myopathies, and bowel and gastrointestinal problems), distortion in social functioning, comorbidities (e.g., depressive symptoms, low self-esteem, bipolar disorders, mood disturbances, anxiety disorders, substance use, alcohol and stimulant use, borderline personality disorder), suicide-related ideation, and suicide (APA, 2013; Galmiche et al., 2019; Quadflieg & Fichter, 2019).

Several theories have been used to underpin bulimia nervosa including self-esteem theory, interpersonal theory, emotion regulation theory, transdiagnostic theory, executive function theory, social neuroscience theory, and theory of mind (Zanella & Lee, 2022). The aforementioned theories mostly focus on the impairing effects of low self-esteem on body image, using dysfunctional eating as maladaptive stress coping, having psychological disturbances, diminished control over eating behaviours due to poor cognitive processes, brain activations and variations in responding to physical social evaluations, and one's capacity to recognize and understand other individuals' mental states, thoughts, beliefs, and emotions on the onset and maintenance of bulimia nervosa (Bora & Köse, 2016; Ciarra & Mathew, 2017; Claudat et al., 2016; Dohle et al., 2018; Karazsia et al., 2017; Xu et al., 2017). Furthermore, several temperamental, environmental, and genetic markers of bulimia nervosa have been identified in etiological studies including weight concerns, depressive symptoms, low self-

esteem, social anxiety disorder, anxiety disorder, unrealistic thin body ideal, childhood sexual or physical abuse, childhood obesity, pubertal maturation, familial tendency, psychiatric comorbidities (APA, 2013; Kostro et al., 2014).

1.4.8 Binge eating disorder

Binge-eating episodes that were the primary trigger of bulimia nervosa can also transform into binge-eating disorder (BED). According to APA (2013), BED can be detected with the repeated episodes (at least once a week for three-month-period) where individuals engage in excessive consumption of food (e.g., larger than normal portions of food) in a specific period of time with the loss of control over eating behaviour (e.g., inability to stop or slow down eating). In these out-of-control eating episodes individuals eat alone and much more rapidly than normal until feeling disturbingly full even when they do not actually feel physical hunger, resulting in feelings of depression, and guilt at the end (APA, 2013). Adolescents and young adults are at most risk for the development and onset of BED (APA, 2013). BED was reported to be the most common eating disorder when compared to other eating disorders (Kessler et al., 2013; Udo & Grilo, 2018). Epidemiological studies indicate that approximately 1.6% of females and 0.8% of males present with BED among American adults (APA, 2013). A lifetime diagnosis of DSM-5 BED prevalence rate was reported to range between 0.6-1.5% among women and 0.3-0.7% among men worldwide (Keski-Rahkonen, 2021). BED is reported to be frequent (1.3-30.1%) among individuals who are overweight or obese who seek weight loss treatment (Dingemans et al., 2002).

BED can lead to many adverse consequences including social functioning, co-occurring mental illnesses (e.g., bipolar and depressive disorders, borderline personality disorder), mood disorders, diminished life quality and satisfaction due to impaired health, elevated health care utilisation, weight gain, obesity, morbidity and mortality (Thornton et al., 2017; Welch et al.,

2016; Wilfley et al., 2003). According to a recent review (Keski-Rahkonen, 2021), 94% of individuals with BED indicated lifetime mental health symptoms including mood disorders, substance use disorders, anxiety disorders, and posttraumatic stress disorder.

From a theoretical perspective, the same frameworks and underpinnings have been used to understand the development and maintenance of BED by scholars (see anorexia nervosa and bulimia nervosa sections to read the aforementioned theories). Furthermore, empirical examinations linked BED with diminished positive affect and elevated negative affect and guilt which may indicate that individuals use binge eating as a maladaptive coping strategy to alleviate unpleasant emotional conditions and promote positive feelings (Schaefer et al., 2020). Etiological studies have identified several correlates and associated factors of BED including perceived life stress, severe depression, anxiety, emotional problems and personality problems (Carriere et al., 2019; Javaras et al., 2008; Klatzkin et al., 2018).

1.5 PhD aims

Taking all aforementioned technological behavioural addictions (e.g., general internet addiction, social media addiction, online gaming addiction, online gambling addiction, online pornography addiction, online shopping addiction) and the developed theoretical models and frameworks of behavioural addictions into account, this thesis attempts to provide novel empirical evidence on addictive mukbang watching and attempts to demonstrate that mukbang watching can also be considered a behavioural addiction. To do this, the thesis will examine the existing publications on mukbang watching from all academic disciplines. The thesis then examines the possible addictive symptoms of mukbang watching via following popularly used diagnostic criteria of other behavioural addictions. Furthermore, the thesis attempts to develop psychometric assessment tools that will help investigate addictive mukbang watching in empirical examinations as there were no such tools in the literature when this thesis began.

Also, the thesis attempts to provide empirical evidence on the motivational, psychological, emotional, and individual difference aspects of mukbang watching that can transform recreational mukbang watching into addictive mukbang watching. In terms of methodology, the thesis will examine different sources for evidence by applying different research methods. This approach is chosen due to its appropriateness with regard to capturing the complexities of mental health and addictive mukbang watching. Consequently, systematic literature reviews, psychometric evaluation, self-report survey data, and self-report interviews will be used to obtain knowledge concerning addictive mukbang watching.

1.5.1 Structure of the thesis

To investigate relevant academic and non-academic literature published in terms of the psychology of mukbang watching, a scoping review was conducted. As a result of the scoping review, it was seen that there is a scarcity of research with regard to the psychology of mukbang watching in the psychology field as well as in other academic fields. This led to the identification of a large gap of knowledge in addictive mukbang watching. In order to assess these gaps, eight empirical examinations were conducted by using a mixed-methods approach. All the empirical investigations examine addictive mukbang watching and its potentially related factors. A brief outline of the thesis chapters is given below.

Chapter 1: General introduction

The purpose of this chapter was to provide an overview of the technological behavioural addictions (i.e. general internet addiction, social media addiction, online gaming addiction, online gambling addiction, online pornography addiction, online shopping addiction) as well as the behavioural addictions and problematic behaviours that may be associated with addictive mukbang watching (i.e. food addiction and eating disorders). This chapter also outlines the

relevant theoretical frameworks and models frequently used to investigate technological behavioural addictions (i.e., CIUM, I-PACE model).

Chapter 2: The psychology of mukbang watching: A scoping review of the academic and non-academic literature

This review aimed to examine the possible gaps in the literature on the psychology of mukbang watching and addictive mukbang watching. It provides a structured review of academic and non-academic literature concerning mukbang watching.

Chapter 3: Methodology

The Methodology chapter gives an explanation and justification of the methodology used in the thesis. Furthermore, a brief overview of qualitative and quantitative research methodologies is given.

Chapter 4: Development and validation of the Mukbang Addiction Scale

This chapter provides preliminary empirical evidence on addictive mukbang watching. More specifically, the symptoms of addictive mukbang watching were examined by developing a new assessment tool to assess addictive mukbang watching among 236 emerging adults who watched mukbang at least once before. Furthermore, a cut-off score was also determined to conduct epidemiological investigations.

Chapter 5: Development and validation of Problematic Mukbang Watching Scale and Mukbang Watching Motives Scale

This chapter provides empirical evidence on the motivational correlates of addictive mukbang watching. More specifically, two psychometrics assessment tools were developed to assess addictive mukbang watching and mukbang watching motivations. Moreover, the cross-

sectional association of mukbang watching motivations with addictive mukbang watching was examined among 604 adults who were familiar with mukbang watching.

Chapter 6: Compensatory usage of the internet: The case of mukbang watching on YouTube

This chapter provides empirical evidence on the psychosocial correlates of addictive mukbang watching. More specifically, the cross-sectional associations of depression and loneliness with addictive mukbang watching were examined among 217 emerging adults who watched mukbang at least once before.

Chapter 7: Emotional and psychological impairment correlates of addictive mukbang watching

This chapter provides an investigation of emotional and psychological impairment correlates of addictive mukbang watching. More specifically, the cross-sectional associations of emotion regulation difficulties, psychiatric distress (i.e., depression, anxiety, stress), and impulsivity facets (i.e., negative urgency, positive urgency, sensation seeking, lack of premeditation, lack of perseverance) with addictive mukbang watching were examined among 513 adults who watched mukbang in the past seven days.

Chapter 8: Addictive mukbang watching and its relationship to disordered eating and internet addiction: A pilot study among emerging adult mukbang watchers

This chapter provides empirical evidence on the behavioural addiction correlates of addictive mukbang watching. More specifically, the cross-sectional associations of internet addiction and disordered eating with addictive mukbang watching were examined among 140 emerging adults who watched mukbang at least once in the past 30 days.

Chapter 9: The role of procrastination between personality traits and addictive mukbang watching among emerging adults

This chapter provides empirical evidence on the personality correlates of addictive mukbang watching. More specifically, the cross-sectional associations of Big Five personality traits, dark personality traits, and procrastination with addictive mukbang watching were examined among 222 emerging adults who watched mukbang at least once in the previous week.

Chapter 10: Addictive symptoms of mukbang watching: A qualitative interview study

This chapter provides qualitative evidence for addictive mukbang watching symptoms by interviewing eight frequent mukbang watchers, and applying directed content analysis. The diagnostic criteria of gaming disorder determined by APA (2013) in DSM-5 was adapted to investigate addictive symptoms of mukbang watching.

Chapter 11: General discussion

This chapter integrates all the findings from the empirical studies in a general discussion. It also considers limitations of the thesis, future implications, and provides concluding comments of the findings presented in this thesis.

CHAPTER 2: Scoping review

2.1 Introduction

The internet can be a mediating tool for individuals to engage in specific behaviours online (Griffiths, 1999). Developments in internet technologies have brought a variety of online applications into individuals' lives (e.g., gaming, gambling, sex, shopping, social networking, etc.), leading to many different forms of gratifications obtained from these activities (Montag et al., 2015). Consequently, internet-use motives of individuals have become increasingly varied and specific over time to a degree that even the most particular applications (e.g., *YouTube*, *Instagram*) have been shown to harbour a variety of features that result in the compensation of unique individual needs (Balakrishnan & Griffiths, 2017; Kircaburun & Griffiths, 2018b).

Recent newspaper coverage has indicated that there has been a growing phenomenon of individuals using internet applications for engaging in a unique online activity, watching mukbang (McCarthy, 2017). Mukbang is a portmanteau of the South Korean words 'eating' ('meokneun') and 'broadcast' ('bangsong'), and refers to online eating shows where a *mukbanger* or broadcast jockey (the individual in the broadcast) eats large portions of food on camera while interacting with viewers (McCarthy, 2017). Even though mukbang first started in South Korea a decade ago, it has now reached increasing popularity in a number of other countries, and where hundreds of thousands access the internet every day in order to watch mukbang videos (Hawthorne, 2019). Mukbang's popularity greatly increased across many regions worldwide after being introduced to western countries in 2015 when a popular American *YouTube* broadcaster uploaded a video commenting on South Korean mukbang videos (McCarthy, 2017). However, despite this rising popularity of mukbang, very little

attention has been given to this phenomenon among scholars. Consequently, empirical studies are warranted to identify psychological characteristics of mukbang viewers and possible consequences of mukbang watching.

Previous studies have applied several theoretical frameworks to investigate the use of different online applications. The compensatory internet use model (CIUM) (Kardefelt-Winther, 2014) is one such model that attempted to explain psychological characteristics of engaging in online activity. According to the CIUM, it is posited that individuals use the internet in order to compensate unattained offline needs via specific online activities (Kardefelt-Winther, 2014). Empirical literature has documented a wide range of compensatory strategies that facilitate the use of different online activities. For instance, self-presentation, belongingness, social gratifications, recreation, and information are motives that have been associated with social media use (Chen, 2015; Seidman, 2013). Online gaming motivations include social reasons, escapism, competition, coping reasons, skill development, fantasy, and recreation (Ballabio et al., 2017; Demetrovics et al., 2011). Furthermore, online pornography consumers use the internet to compensate for their needs for sexual arousal, physical pleasure, a sense of excitement, and avoiding uncomfortable emotions (Brown et al., 2017).

However, for a minority of users, compensating different needs via online usage can lead to negative consequences (Kardefelt-Winther, 2014). According to coping style theory, maladaptive coping exacerbates negative emotions and mitigates positive emotions and wellbeing (Folkman & Lazarus, 1988; Lazarus & Folkman, 1984). For a minority of individuals, empirical research has identified several negative outcomes of online pornography use, social media use, online gambling, and online gaming including elevated depression, higher anxiety, increased negative mood, lower self-esteem, sleeping problems, suicide ideations, increased alcohol/substance abuse, lower social integration, and higher conduct

problems (Kuss & Griffiths, 2012a; Owens et al., 2012; Sherlock & Wagstaff, 2019; Wenzel et al., 2009).

Despite a large amount of research concerning the reasons and consequences of the use of online activities (e.g., online social networking, online gaming, online shopping, online sex, and online gambling), very little attention has been given to mukbang watching among psychologists. Therefore, the present chapter aimed to scope the literature in order to identify existing publications that have empirically investigated and/or theoretically examined the mukbang phenomenon and conceptualised the psychological characteristics of mukbang viewers and possible consequences of mukbang watching.

2.2 Methods

The present study carried out a scoping review. A scoping review comprises an attempt to survey the literature on a specific topic in order to identify key concepts, available evidence, and gaps in the research with regard to the chosen topic irrespective of the source material or quality of the source (Pham et al., 2014). A scoping review was conducted because of its different facilitations including the (i) ability to examine the extent and nature of the existing research on a particular topic; (ii) opportunity to summarise and disseminate research findings; and (iii) ability to determine research gaps in the literature (Daudt et al., 2013). The methodological framework for conducting a scoping study described by Arksey and O'Makkey (2005) was used in the present study. Consequently, five stages were included: (i) identifying the research question; (ii) identifying relevant studies; (iii) study selection; (iv) charting the data; and (v) collating, summarising, and reporting the results. In line with the principles of scoping reviews (Kavanagh et al. 2005), the present paper aimed to make a preliminary assessment of the potential scope of the available research literature without attempting to control for the quality or source of the data. Sources of material used in the present review were both academic and non-academic (e.g., print media).

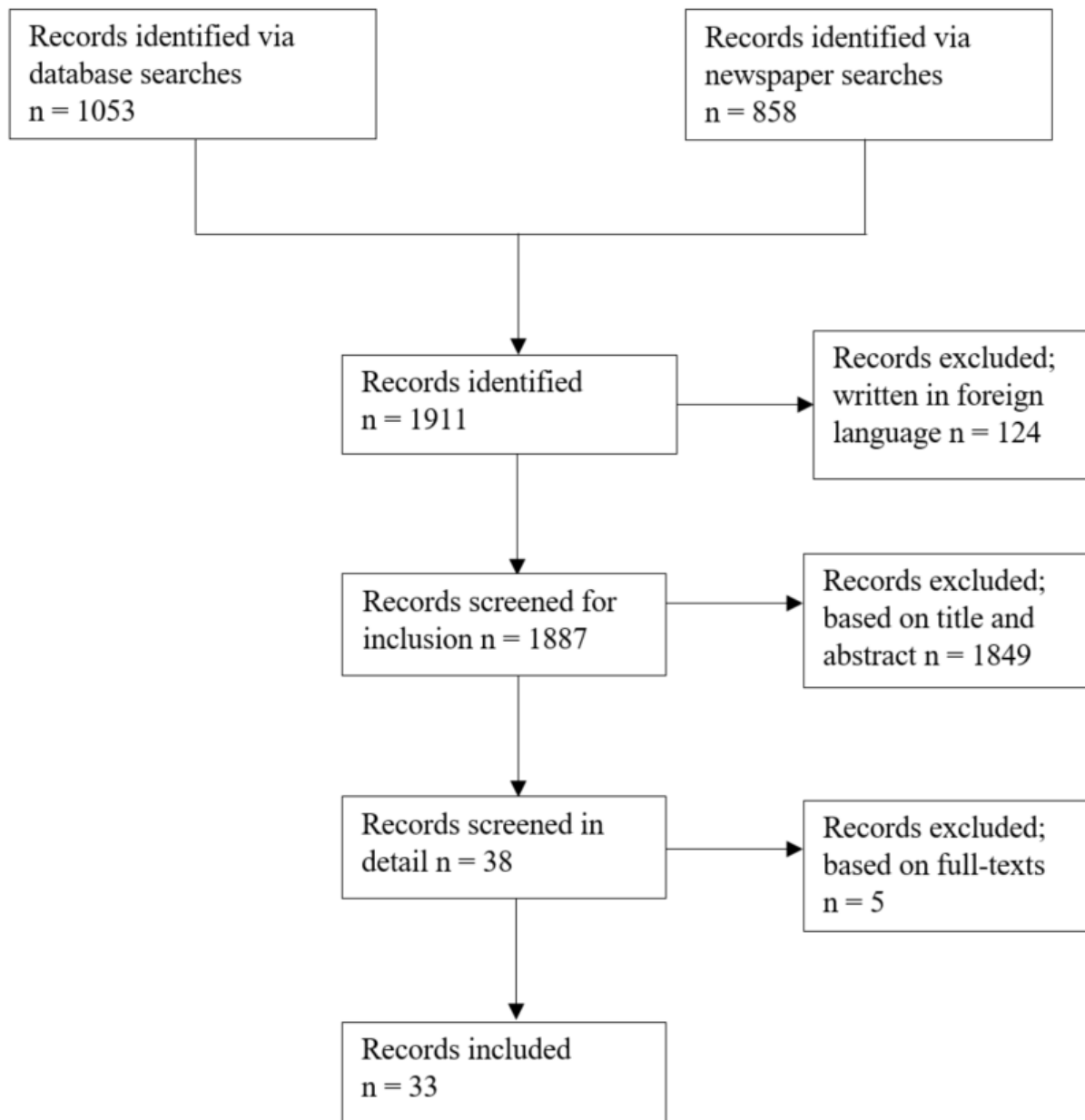


Figure 2. 1. Flow chart of study selection process

Research question

The present study conducted a scoping review to find answers to the following questions: ‘What are the psychological characteristics of mukbang viewers?’ and ‘What are the psychological consequences of mukbang watching?’.

Information sources and inclusion criteria

Initially, all scientific literature including published papers, conference presentations, commentaries, content analyses, critical reviews, literature reviews, case reports, dissertations, and empirical studies that have examined mukbang phenomenon was searched for. To be included in the present study, the publications had to have (i) addressed topics related to psychological characteristics of mukbang viewers, and (ii) been written in English language. Several electronic databases were used for this review including, but not limited to, *Academic Search Elite*, *PsychArticles*, *PsychInfo*, *Science Direct*, and *Scopus* via using the research team's *Library One Search* electronic search engine. Furthermore, *Google Scholar* was used as a secondary source search engine. A snowballing method was also used to identify relevant publications from scientific literature via examining the reference lists of found studies. In the second step, non-academic 'grey' literature was reviewed via examining the national newspapers in the UK (Wikipedia, 2019) as information sources. The search terms used were 'mukbang' (and its alternative spellings such as 'mokbang', 'meokbang' and 'mökpang'), and 'eating broadcast'.

2.3 Results

2.3.1 Academic literature

After scoping the academic literature, 1053 publications were identified. First, publications written in foreign languages (n=124) were removed. Second, based on the title and abstract, studies that were duplicates and/or irrelevant to the present study's aims (n=915) were excluded. Once irrelevant and duplicate publications were removed using manual searching, 14 records remained. Of these, and as a result of full-text examination, one Master's thesis was removed due to its irrelevance to the present study's aims (see Figure 1). Two of the outputs were theoretical and eleven of them were empirical publications providing both theoretical discussions and empirical findings concerning the mukbang phenomenon (see Table 1). The scoping review of academic outputs showed several common themes including social use of

mukbang, sexual use of mukbang, entertainment use of mukbang, escapist use of mukbang, ‘vicarious eating’ use of mukbang, and consequences of mukbang watching.

Table 2. 1. Publications that theorised or empirically studied psychological characteristics of mukbang viewers or consequences of mukbang watching (in alphabetical order of first author)

Authors	Methodology	Sample	Discipline	Output type	Main findings
Bruno (2016)	Content analysis	Not applicable	Media	Journal paper	It was argued that when watching someone eat on camera, viewers felt as if they were eating and they could almost taste the food and the consequent feeling of satiety.
Bruno and Chung (2017)	Case studies and content analysis	Three mukbangers and a shop owner from South Korea	Media	Journal paper	It was theorised that those who are lonely but desire a social presence, those who are on a diet, and those who have health problems watch mukbang. It was argued that viewers may engage in anti-social behaviours while watching mukbang, and that mukbang alters viewers’ food preferences in a negative way.
Choe (2019)	Content analysis	South Korean male mukbanger	Sociolinguistics	Journal paper	It was argued that viewers obtain different gratifications from watching mukbang including having excitement for the eaten food, enjoying the eating sounds mukbangers make, vicarious satisfaction of eating the food they crave through mukbanger while on a diet. It was theorised that the satisfaction obtained from mukbang is related to obtaining visual and audio stimulation. It was argued that there are also social gratifications obtained from mukbang including alleviating loneliness, bonding with mukbanger, and feeling more connected to a community.
Donnar (2017)	Commentary	South Korean female mukbanger	Media	Journal paper	It was theorised that mukbang has a sexual aspect, a food porn aspect, and a compensation for eating aspect. It was argued that mukbang watching is risky in that it can promote

Gillespie (2019)	Content analysis	Nine female mukbangers from U.S.A., Canada, and South Korea	Feminist studies	PhD thesis	<p>problematic eating and food practices, and that mukbang can also have positive effects on viewers by promoting the sense of subjective closeness and community and mitigating loneliness and alienation.</p> <p>It was theorised that magical eating fantasy, experiencing the sensation of binge eating, seeing women eat messily, and noisy with great pleasure motivates individuals to watch mukbang.</p>
Hakimey and Yazdanifard (2015)	Review	Not applicable	Business studies	Journal paper	<p>It was theorised that people watch mukbang with different motivations including vicarious eating, compensation of the inability to access different foods, encouragement for overcoming disordered eating, social interaction, stress relief, and connection felt towards mukbangers.</p>
Hong and Park (2018)	Content analysis	30 South Korean mukbangers	Communication	Book chapter	<p>It was theorised that viewers enjoy watching mukbangers who (i) challenge themselves to eat extremely spicy food, (ii) consume very large portions of food, (iii) combine cooking and eating parts and explain recipes and tips, (iv) illustrate unpredictable odd behaviours while eating, and (v) focus on their attractiveness and chat with their viewers. It was argued that mukbang has different effects on viewers including their food selection, table manners, and perception of food consumption and thinness.</p>
Pereira et al. (2019)	Self-report cross-cultural analysis	114 Asian college students and 129 Caucasian adults designated in Australia	Marketing	Journal paper	<p>Attitude towards mukbang was positively related to host attractiveness and social normative influences in both Asian and Caucasian samples. Attitude towards mukbang was positively associated with perceived novelty in Caucasian sample. Loneliness and health consciousness were</p>

Schwegler-Castañer (2018)	Case studies	South Korean, Singaporean, and American female mukbangers	Feminist studies	Journal paper	not related to attitude towards mukbang in both samples. Intention to watch mukbang was strongly positively associated with attitude towards mukbang. It was theorised that mukbang could alleviate loneliness and social isolation, fetishize women eating, promote entertainment gratifications of sensory satisfaction, and amusement of sharing others' eating experiences.
Song (2018)	Content analysis	Nine South Korean mukbangers	Communication	Journal paper	It was argued that viewers grow fond of and feel connected to the mukbangers as a result of having live interaction with them. Some viewers insulted mukbangers for their appearance and the amount of food they consumed.
Spence et al. (2019)	Review	Not applicable	Psychology	Journal paper	It was theorised that mukbang could be used to promote commensality in order to cope with eating alone. It was argued that mukbang watching might also lead viewers to consume more food than they normally would because of the excessive eating of mukbangers.
Tu and Fishback (2017)	Experiment	Not provided	Marketing	Conference paper	Watching others eat a particular food led to diminished desire towards that particular food, activating a vicarious satiation.
Woo (2018)	Content analysis	A South Korean male mukbanger	Anthropology	Journal paper	It was theorised that loneliness leads people to watch mukbang, and that viewers obtain pleasure from different sensations related to eating, especially via Autonomous Sensory Meridian Response experience.

2.3.1.1 Social use

One of the most noted aspects of the mukbang phenomenon was its role in social facilitation. Schwegler-Castañer (2018) described the cases of three female Mukbangers (one Singaporean, one South Korean, and one American) and discussed mukbang from a feminist studies perspective. According to her, mukbang videos had the potential to counteract loneliness and isolation by connecting and sharing a similar interest with a virtual community. In a review study about digital commensality (i.e., the practice of eating together), Spence et al. (2019) argued how mukbang could be used to psychologically facilitate commensality in order to cope with eating alone. Their main concern was that there had been few empirical studies on how mukbang watching might affect viewers. They also questioned whether mukbang could provide similar benefits for an individual's mental health that were related to physically dining together with others. Despite the scarcity of research on psychological predictors and consequences of mukbang phenomenon, they concluded that watching mukbang while dining could potentially provide viewers a sense of digital commensality (Spence et al., 2019), and which could foster feelings of affective connection with other individuals.

Hakimey and Yazdanifard (2015) examined the interaction of South Korean culture and the mukbang phenomenon by reviewing newspaper coverage concerning mukbangers. They concluded that mukbang watching enabled viewers to communicate with thousands of individuals from home while watching someone eat. Hakimey and Yazdanifard (2015) argued that similar to Western citizens, South Koreans across all age groups were increasingly suffering from living alone and being lonely in single-person households, and this elevated social isolation led them to watching mukbang as a means to have eating partners and feeling emotionally connected to others.

According to Hakimey and Yazdanifard (2015), the emotional connection and empathy felt toward mukbangers are also important contributors in watching mukbang. For instance, one leading mukbanger facilitated this aforementioned connection among his male audience

members via eating food in army training outfits in a room decorated with different army paraphernalia (e.g., toy rifles, battle figures) that reminded viewers of nostalgic memories of their service as a soldier. Hakimey and Yazdanifard (2015) argued that mukbang provided a harmonious set-up where individuals got together as one society and associated with one another on shared interests. Positive remarks about the mukbanger and food advanced higher feelings of community and positive emotions among those who watched mukbang (Hakimey & Yazdanifard, 2015).

Some academic outputs have analysed mukbang-related content (e.g., mukbangers, mukbang videos, viewer comments). Choe (2019) conducted a content analysis study analysing and reviewing 67 mukbang video clips of a male South Korean mukbanger. She examined the mukbang phenomenon in South Korean culture from a sociolinguistic perspective. Choe (2019) emphasised that eating together was considered a crucial aspect of South Korean culture that individuals go beyond sharing a table to as far as eating from the same bowls. According to Choe (2019), one important facilitation of mukbang was the fulfilment of an aspiration to eat with a company. Choe (2019) theorised that as isolated eating was increasingly commonplace in many regions of the world as well as in South Korea, mukbang provided a sense of social unity for those physically eating alone. Watching mukbang made viewers feel emotionally connected as if they were dining with someone (Choe, 2019). Moreover, mukbang watching enabled a sense of co-presence among viewers via commenting with each other to eat food together while watching their favourite mukbanger (Choe, 2019). She also emphasised the role of mukbangers in providing a sense of collaborative eating via engaging in different eating actions participated by viewers, consequently resulting in an elevated connection between the mukbanger and viewers. According to Choe (2019), through food and eating, mukbang watchers were associated with each other by a feeling of co-presence that overcame physical distance.

In another content analysis study, Donnar (2017) focused on the cases of four South Korean mukbangers and analysed their content to discuss the concept of ‘food porn’ among most attractive female mukbangers. Donnar emphasised that watching mukbang can facilitate subjective closeness and a sense of community, and help overcome loneliness and alienation for those who live alone and seek companionship and a dinner partner. Hong and Park (2018) analysed South Korean mukbang videos broadcasted on *Afreeca TV* in order to discuss mukbang’s features and implications for contemporary South Korean society. They initially went through 30 active mukbanger profiles. They argued that viewers watched mukbang as a “meal mate” (p. 118) in order to avoid eating alone and alleviate loneliness. Individuals usually watched mukbang around mealtime or late-night snack time. Hong and Park (2018) theorised that mukbang fulfilled physical and sentimental hunger of single-person households by providing simple recipes or tips for eating alone and by creating a sense of social bonding and belongingness with mukbangers and other viewers.

Woo (2018) conducted a content analysis study to examine South Korean mukbang from a digital communication and advertising perspective. Her research suggested that mukbang’s popularity in South Korea was mostly associated with viewers’ attempt to overcome their loneliness via simulating the act of eating with friends or family by making connections with mukbangers. Gillespie (2019) analysed 36 mukbang videos of a total of nine female mukbangers from U.S.A., Canada, and South Korea who had a large number of subscribers, and used rhetorical criticism from a feminist approach to argue that mukbang viewers reacted to mukbang videos in order to find out mukbang’s effect on hegemonic thinness culture. Gillespie (2019) claimed that mukbang viewers enjoyed seeing women eating messily, being noisy, demonstrating pleasure, and eating too much even though they saw these behaviours as transgressive acts. According to Gillespie (2019), female viewers were particularly drawn to

mukbang because they feel connected to other females who were eating very large portions of unhealthy food messily and open to the public.

Bruno and Chung (2017) carried out a case study where they interviewed three South Korean mukbangers and a shop owner to examine the factors that draw viewers to watching mukbang. They also collected data from viewers' chat logs, images of mukbangers' personal broadcasting homepages, and information found on the *AfreecaTV* homepage. Bruno and Chung (2017) argued that the main beneficiaries of vicarious pleasures provided by mukbang were individuals who eat alone but desire a social presence. They claimed that one possible motivation of mukbang viewers was that they were forming a kind of viewing community via interacting and communicating with each other on a common interest, which promoted elevated feelings of pleasure and belonging. Participants perceived mukbang as a free space where they could share a vicarious pleasure.

Bruno and Chung (2017) theorised that even though all viewers did not know one another, they could feel the presence of other viewers through the chat screen or comments and likes. The chat screen influenced the quality and popularity of mukbang and the emotional mood of the viewers. Live chat during and after eating could sometimes be more important than eating itself for some viewers. Content analysis revealed that approximately 10% of viewers stayed logged in when the eating had finished to chat about different topics relating to their daily lives. Bruno and Chung (2017) pointed out that these chat interactions developed empathic relationships between mukbanger and viewers as well as between viewers. Viewers also felt attracted to mukbangers' effort to create a social presence in mukbang videos via showing their personal side, reacting to viewers' comments, pausing eating, and thanking the viewers who sent gifts. Similarly, Song (2018) content analysed the chats among the viewers and South Korean mukbangers and argued that viewers grew fond of and felt connected to the mukbangers as a result of live interaction.

However, Bruno and Chung (2017) emphasised that social presence and interaction among viewers might also become uncontrolled. For instance, some viewers had become so connected to each other that they started using specific mukbang channels just to communicate with each other (Bruno & Chung, 2017). Some viewers insulted mukbangers for their appearance and the amount of food they consumed (Song, 2018). Others spread rumours about the mukbangers they watched in order to damage their reputation and relationships with others. Bruno and Chung (2017) noted that even though most viewers commented with positive and constructive remarks, some insulted or criticised mukbangers or the food. These were important because positive or negative audience reactions affected other audiences' reactions to and interactions with the mukbang content.

2.3.2 Sexual use

Another aspect of mukbang was its sexual use. Schwegler-Castañer (2018) argued that mukbang might be comprehended as fetishizing women eating. She emphasised the self-portrayal of women eating huge amounts of harmful food showing the “shameful appetite” (p. 784) that women conceal which was susceptible to sexualizing women's bodies. She also pointed out the potential sexual objectification of the female body and reinforcement of the normative values regarding thinness and consumerism.

Donnar (2017) concluded that slim and attractive female mukbangers were usually surrounded by overweight male fans and viewers. According to Donnar, mukbang had a sexual aspect with its facilitation of a sexualised gaze to attractive mukbangers while they were in a somewhat private and vulnerable state (i.e., eating). It was concluded that viewers reacted with divergent feelings to these sexual and eating sensations provided by mukbang videos, including pleasure, desire, longing, envy, horror, disgust, and shame.

Only a few cross-sectional studies have examined the mukbang phenomenon. In a self-report cross-cultural study, Pereira et al. (2019) surveyed 114 Asian and 129 Caucasian participants to examine why online consumers watch mukbang. Path analysis showed that host attractiveness was positively related to attitudes towards mukbang in both samples. According to Pereira et al. (2019), even though the study only examined physical attractiveness of the mukbanger, there were well-known mukbangers with high sociability and likeability (rather than physical beauty) who gathered large numbers of viewers. Nevertheless, this study emphasised the importance of physical attraction toward mukbangers among viewers. One of the limitations of this study was that the sample comprised both those who watched mukbang and those who did not know anything about mukbang (Pereira et al., 2019).

2.3.3 Entertainment use

Individuals who watch mukbang also seek entertainment. Choe (2019) concluded that viewers extracted different gratifications from watching mukbangs, including the enjoyment of the eating sounds that the mukbanger made (e.g., slurping, chewing). Woo (2018) suggested that viewers obtained pleasure from different sensations including listening to eating and cooking sounds such as chewing noises, preparing foods, and sounds from opening up food packages (Woo, 2018). Woo claimed that these sounds provided an Autonomous Sensory Meridian Response (ASMR) experience by causing static-like, tingling sensations along the skin and triggering a sense of happiness and relief. Woo argued that these sounds increased viewers' feeling of telepresence.

Schwegler-Castañer (2018) theorised that the edited non-simultaneous interaction between the viewers and mukbangers also provided an alluring viewing experience for the audience. However, for others, mukbang could become an experience of ASMR where the viewers were more keen on the sounds produced by the act of eating than the consumption itself. She also

noted the potential entertainment gratifications of mukbang that help viewers achieve sensory satisfaction and amusement through sharing others' eating experiences.

2.3.4 Escapist use

Some studies have theorised that viewers use mukbang watching as an escape from reality. Hakimey and Yazdanifard (2015) concluded that individuals watched mukbang for different motivations and reasons. Some of the viewers wanted to observe someone eat different foods because of their inability to access a wide variety of different foods (e.g., because they were hospital patients). Another reason for South Koreans being drawn to mukbang was to alleviate stress. Hakimey and Yazdanifard (2015) speculated that South Koreans alleviated their stress from their fast-paced and hyper competitive way of life by watching someone eat. According to Bruno and Chung (2017), viewers tried to escape from a sense of guilt and stress of being fat via watching mukbang (Bruno & Chung, 2017). In addition, adolescents who were bored or hungry late in the evening, and youngsters who would like to order food but could not because their parents were at home, enjoyed mukbang as an escape from unpleasant reality.

2.3.5 Eating use

One of the key compensations provided by mukbang watching was vicarious eating. Hakimey and Yazdanifard (2015) emphasised that individuals watched mukbang to have the experience of eating vicariously through mukbangers because they were on diets. Choe (2019) also posited this theory by arguing that viewers extracted different gratifications from watching mukbangs, including having excitement for the eaten food and satisfaction of watching mukbangers conspicuously consume the food they crave while they were on a diet. Choe (2019) further asserted that mukbangers helped satisfy food cravings of the viewers by giving them a vicarious pleasure of eating. According to her, viewers had a vicarious satisfaction of eating from mukbang via obtaining visual and audio stimulation.

As a result of her analyses, Donnar (2017) argued that, considering the mouth-watering scenery of the act of eating (e.g., “*orgasmic first bite*” [p. 123] and continuous pleasure cues given by mukbangers throughout the video), mukbang was akin to ‘food porn’ rather than food images or food-related television shows. Donnar claimed that interactions between mukbangers and fans (e.g., responding to fan requests as they eat, talking while eating) were making mukbang similar to webcam porn. Some dieting female viewers watched mukbang as a satisfaction of their fetishistic desires for vicarious consumption while avoiding actual eating. Bruno (2016) analysed several South Korean television shows that involved eating. According to her, when watching someone eat on camera, viewers felt as if they were eating and they could “*almost taste the food and the consequent feeling of satiety*” (p. 159).

Gillespie (2019) argued that magical eating fantasy (i.e., the idea of eating as much as desired without suffering the consequences) was one of the most important motivations that drove individuals to watch mukbang. According to Gillespie (2019), watching mukbang provided viewers satisfaction via the sensation of binge eating themselves. Some viewers used mukbangers as a proxy for eating by creating a reality where they were becoming the mukbangers by proxy as a way of fulfilling their fantasies of eating (Gillespie, 2019).

Furthermore, Bruno and Chung (2017) concluded that some viewers did not care about the mukbangers and saw them as prostitutes who eat/consume whatever viewers demand in exchange for money. They theorised that the main beneficiaries of vicarious pleasures provided by mukbang were individuals who were on a diet. They also argued that mukbang was a complex phenomenon that shared some common features with food porn and food voyeurism. They claimed that viewers got vicarious satisfaction from watching the food being eaten, in which part of the viewers’ vicarious pleasure came from the eating performance of the mukbanger. They also theorised that it was very important for some of the viewers that mukbanger ate the food they selected and desired. Viewers’ vicarious pleasure demanded a

large quantity of unhealthy food to be consumed. Making loud sounds while eating and showing the food in an appetising way on camera attracted the viewers, especially the ones who were on a diet. Most of these viewers watched to see the food, not to see mukbanger's face. Viewers wanted the mukbanger to eat it with hearty and keen enjoyment to satisfy themselves.

In an American study on how mukbang could affect viewers, Tu and Fishback (2017) conducted several experiments that examined the vicarious satiation phenomenon by observing how watching others consume specific foods affected viewers' desires toward those particular foods. The first experiment indicated that viewers who watched someone else eat a pizza desired less pizza than before watching the video. The second experiment demonstrated that viewers who watched someone eat *M&Ms* (a brand of candy) postponed consumption of *M&Ms* and chose to eat another product after watching the video. The third experiment showed that this lessening effect was present only among those observers who watched someone that shares their political view eat the candy (Tu & Fishback, 2017). As a result of the three experiments, Tu and Fishback (2017) concluded that individuals could experience vicarious satiation when they observed others' consumption as their own.

2.3.6 Consequences of mukbang watching

Papers identified in the present scoping review also found that mukbang watching can harbour potential desired and undesired consequences for the viewers. For instance, Spence et al. (2019) theorised that one of the potentially harmful aspects of mukbang might be that individuals' consumption norms could easily be affected by others' consumption. They argued that individuals were susceptible to consuming more than they normally would if they see another individual consuming a large high calorie meal because of social comparison or mimicry. They theorised that, watching mukbang videos where mukbangers eat very large portions of food might easily lead mukbang viewers to higher than normal consumption. Donnar (2017) claimed that mukbang could promote problematic eating and food practices among both mukbangers

and viewers for those who were already experiencing different eating problems. She claimed the mukbang phenomenon damaged South Koreans' relationship with food and hunger by normalising conspicuous consumption and consumption of different foods that were not historically welcome in South Korea such as western fast food. She argued that elevated consumption promoted by mukbang could further contribute to the problems that South Korean society was already going through including growing obesity, food disorders, and real-life social isolation (Donnar, 2017).

Hong and Park (2018) identified and discussed different effects of mukbang watching upon South Korean viewers. They claimed mukbang videos affected viewers' food selection in a way that the food consumed in mukbangs (e.g., fast food, junk food) were sometimes different from South Korea's traditional foods and mukbangers influenced viewers' perceptions of these foods by urging viewers to enjoy instant meals, frozen food, and poor nourishing foods that were spicy and oily with a high caloric content. Second, Hong and Park claimed that mukbang videos affected viewers' table manners because mukbangers usually exhibit bad eating and table manners by snatching or scooping food, and eating it up carelessly while conversing with their viewers with their mouths full. They also emphasised their eating sounds in order to stimulate viewers' senses in which all these behaviours contributed to disruption of traditional eating manners and habits that viewers had.

According to Hong and Park, mukbang videos also affect viewers' perception of food consumption and thinness because mukbangers who were very thin and slim consumed very large portions of food and did not gain weight. This manipulated viewers' psychology to question their efforts to stay fit. Furthermore, Bruno and Chung (2017) emphasised that mukbang influenced social and cultural food behaviour by altering viewers' food and brand preferences because mukbangers could make viewers salivate over the meal being eaten by the

mukbanger. The authors claimed this influence could lead to decrease in home-made food production and an increase in fast food consumption.

2.3.7 Newspaper literature

As noted earlier, scoping reviews do not discriminate between the source of the material or the quality of the source material. As there are so few academic studies examining mukbang, a review of print media was also undertaken by searching for mukbang stories in national UK newspapers (the country where the present authors are based). Following this search, 858 records were identified. Once duplicate and irrelevant articles had been removed using manual searching, 24 stories remained. Of these, 20 articles discussed mukbang and were relevant to the study's aims. These articles proposed some different aspects concerning the mukbang phenomenon. You (2018) focused on Chinese mukbangers who ate different shapes and colours of ice in front of the camera. According to You (2018), viewers' attention could be drawn via demonstrating extreme behaviours. For instance, the Chinese government banned seductive banana eating broadcasts in order to decrease what they perceived as inappropriate and erotic online content. Hicks (2019) reported a Chinese male mukbanger who was known to eat weird and repulsive things in order to attract more viewers (e.g., mealworms, centipedes, geckos). He had already 15,000 followers watching his live streams in a social media platform called *DouYu* (Hicks, 2019).

In another article, McFadyen (2015) reported that 5.5 million viewers had watched a mukbang video in which a South Korean female mukbanger sucked on a raw chicken. McFadyen pointed out that viewers wanted to watch the mukbanger's other bizarre on-camera behaviours (e.g., making the chicken dance, cracking eggs on her forehead and mixing them with her bare hands). Boyd (2019) reported a story about a female mukbanger who tried to eat a newly-discovered penis-shaped clam while it was alive in one of her eating broadcasts. Ritschel (2019) reported that thousands of viewers had watched a female Chinese mukbanger who attempted to eat a live

octopus on camera. Finally, Gander (2016) reported the cases of viewers who were interested in watching videos that involved a mukbanger eating 10,000 calories.

In addition to bizarre and extreme mukbang behaviours, some newspaper articles have reported stories about different uses of mukbang watching among viewers. According to these stories, one of the prominent motivations of mukbang was its social use. Moran (2019) reported on how mukbang had become popular in South Korea as well as other countries including Australia and UK via giving examples of famous mukbangers from these countries. According to Jeff Yang, an Asian-American cultural critic, mukbang's popularity was related to the increasing isolation of modern life because mukbang provided social settings to the viewers where they can interact with mukbangers. Lavelle (2018) discussed mukbang watching from a loneliness perspective by drawing attention to the growing number of single-person households in the UK. Lavelle interviewed two individuals (Alice Stride, a spokeswoman for the Campaign to End Loneliness, and Ben Edwards, self-confidence expert and relationship coach) and concluded that mukbang might bring viewers who have been living alone for a long time great comfort.

Greatrex (2016) interviewed a British mukbanger about eating and mukbang viewers. According to this mukbanger, who was also watching other individual's mukbang videos, mukbang helped lonely individuals feel like they were eating with someone else (Greatrex, 2016). Bloom (2013) published an article about mukbang by making reference to a South Korean female mukbanger. Here, mukbang helped make eating alone a little less miserable. Malm (2014) carried out an informal content analysis on videos of a female mukbanger from South Korea and her comments about mukbang videos and viewers. One of the main motivations given for mukbang watching was to alleviate loneliness by getting a sense of community when eating.

Stanton (2015) interviewed a young South Korean mukbanger and examined his videos. According to her, the popularity of mukbang phenomenon was that many South Koreans live

alone and give strong social value to eating. The interaction with the mukbangers in comments and live chats was a factor that drew viewers to mukbang. It was claimed that some viewers went so far as to prefer dining in their bedrooms watching their favourite mukbangers instead of eating with their parents. Bryant (2016) examined mukbang phenomenon from both a mukbanger and viewer perspective by examining mukbang videos and comments. It was reported that hundreds of thousands of Americans connected with other lone diners from their home by watching mukbang videos where an individual binge-eats junk food in front of the camera.

Tran (2019) emphasised that the mukbang phenomenon was helping viewers alleviate social isolation that arise from living, cooking, and eating alone. An Associated Press (2019) article featured a story about mukbang viewers and mukbangers. It noted that eating was a social activity that connects individuals through meals. According to the story, viewers were drawn to the intimate social environment created by mukbangers by chatting while eating.

According to the British print media, another important aspect of mukbang is that individuals can vicariously eat by watching mukbang. In fact, one of the main motivations for mukbang watching was the vicarious pleasure of eating (Malm, 2014). According to Bloom (2013), mukbang can be referred to as "*dinner porn*" where mukbangers gorge on food for money. Pettit (2019) reported how watching mukbang influenced viewers by quoting viewers' thoughts about mukbang. According to Pettit, viewers ate via the mukbanger by fantasising about the food while watching mukbang. Furthermore, Pettit emphasised that specific preference of food played a crucial role in deciding which mukbang videos to watch. An article by the Associated Press (2019) on mukbang emphasised that viewers who were on a diet watched mukbang to gain a virtual satisfaction whenever they felt like eating junk food. It was also mentioned that some mukbangers avoided speaking in their videos which drew focus to the crunching and slurping sounds in order to give viewers more pleasure. Bryant (2016) pointed out that viewers

hated mukbang videos if the mukbanger was not enjoying the food and did not finish all the food.

Grant (2015) examined mukbang videos and mukbangers' interviews to gain understanding of the mukbang phenomenon and how it affected viewers. She concluded that viewers benefited from watching mukbang by satisfying themselves by eating vicariously through mukbangers. According to a British mukbanger, who was also watching other individuals' mukbang videos, mukbang helped those who were on a diet to have vicarious satisfaction of eating and those who had eating disorders (Greatrex, 2016).

The extant newspaper articles identified that mukbang was also being watched for entertainment and escape from reality. For instance, according to You (2018), millions of Chinese viewers watched these videos for the pleasure of hearing the crunching sound. Mukbang videos apparently helped viewers relieve stress and to have pleasure and happiness (Pettit, 2019). The Associated Press (2019) article emphasised that watching others eat with so much enjoyment was fun, soothing, and an escape from reality. Tran (2019) also argued that the viewers used food and mukbang as an escape from real life.

Despite a number of academic papers on the sexual use of mukbang, there was only one newspaper article that argued that some individuals used mukbang for sexual motivations. Sanghani (2014) focused on the sexual side of mukbang by examining mukbangers and their videos. It was reported that some men paid good money to watch "*PG-rated dinner porn shows*" where slim young women ate an incredible amount of food for money. Sanghani argued that most of the viewers of attractive female mukbangers were men and this was because they were more interested in the women who ate the food than the food itself. According to Sanghani, mukbang was unhealthy because men paid to watch women and it was increasing the obsession with women's bodies.

Regarding the negative consequences of mukbang watching, Park (2018) reported that South Korea's government was planning a crackdown on mukbang videos in order to inhibit rising obesity rates. According to Park, the obesity rate in South Korea had risen from 31.7% in 2007 to 34.8% in 2016. The article pointed out that the government was going to develop guidelines for mukbang videos to improve eating behaviour and to monitor these shows as part of a wider anti-obesity programme. Park reported mixed reactions to the government's decision on mukbang. Mukbangers opposed this plan because they believed these measures would destroy individuals' happiness while making little difference to individuals' health. On the other hand, after witnessing their children challenging themselves to eat as much as the mukbang broadcaster, some parents who have young children have defended the government's plan because they believed mukbang could negatively influence teenagers (Park, 2018). Another article supported these concerns by arguing that watching mukbang might be dangerous especially for younger viewers through modelling bad behaviour (e.g., binge-eating) and perceiving it socially acceptable (Associated Press, 2019).

Shipman (2019) drew attention to possible dangers and detrimental effects of mukbang watching by sharing quotes from interviews of two health experts (Uxshely Chotai, founder of the Food Psychology Clinic, United Kingdom, and Dr Naveed Sattar, Professor of Metabolic Medicine at the University of Glasgow, United Kingdom). According to authorities, glorifying binge eating such as mukbang does was similar to binge drinking and promoting the idea that bingeing on food was something to be proud of. Shipman mentioned a British mukbanger (Adam Moran) who has devoured huge quantities of food in his videos that was being watched by millions of individuals. In one video, he ate more than 10,000 calories-worth of *Lidl* products in one sitting. The article reported that, according to another health expert, since individuals eat with their eyes, seeing someone bingeing on these unhealthy foods could trigger a response in the viewers because it might cause viewers to perceive bingeing as a normal behaviour. Malm

(2014) claimed that mukbang watching could even turn into an addictive behaviour for lonely individuals because they could communicate with thousands of people at home via mukbang. Obtaining social gratifications and compensating unattained offline social needs using a specific online activity could promote addictive use of that activity among a small minority (Kardefelt-Winther, 2014).

2.4 Discussion

The present review presented in this chapter is a first attempt to scope the literature from the lens of psychology and associated disciplines and give information on what has been theorised and discussed concerning the psychological characteristics of mukbang viewers and possible consequences of mukbang watching. One of the most important aspects of mukbang viewing was that individuals appeared to use mukbang to compensate for their unattained real life social needs. Almost all existing theoretical studies argued that viewers obtained social gratifications from mukbang watching. This was mainly lonely individuals using mukbang to alleviate their social isolation by interacting with a virtual community of a shared interest and developing higher feelings of belongingness. This is in line with the existing literature regarding other online activities which suggest that individuals engage in online activities which facilitate social interaction (Stafford et al., 2004). For instance, individuals use social media sites to maintain their existing social relationships, meeting new individuals, and socialising (Horzum, 2016).

Online gaming platforms provide the opportunity to create strong friendships and emotional relationships because players have the ability to express themselves in ways they might not feel comfortable doing in real life (Cole & Griffiths, 2007). Online gambling has also been found to be affected by social facilitation whereby feeling others' presence while gambling increased gamblers' arousal (Cole et al., 2011). Furthermore, some studies emphasise the prominent role of mukbanger-viewer connection on mukbang watching. The interaction and emotional relationship established between the mukbanger and viewer appears to facilitate viewers to

watch mukbang for social compensation. This is also in line with previous studies showing that emotional connection between the broadcaster and viewers make online videos electronic forms of intimacy that allows broadcasters to create richer social relationships with their audience (Liu et al., 2013; Rosen, 2012).

Another aspect of mukbang watching was its alleged sexual uses. Mukbang watching was theorised to sexualize women's bodies in a way that viewers were more focused on the mukbanger than the food being eaten (Donnar, 2017; Schwegler-Castañer, 2018). One of the very few cross-cultural studies regarding mukbang phenomenon found that physical attractiveness of the mukbanger was positively related to viewers' attitude toward mukbang (Pereira et al., 2019). This relationship may indicate that mukbang bears the potential to be a sexual activity for some viewers because sexual arousal is moderately correlated with the watched person's physical attractiveness among both men and women (Sigre-Leirós et al., 2016). Although existing studies mostly mentioned sexualisation of female bodies, male mukbangers could also have been watched for sexual gratifications. Extant literature supports the notion that both men and women engage in unusual sexual fantasies (Joyal et al., 2015). In fact, some individuals may combine sexual and eating gratifications and form a unique type of fantasy (i.e., feederism). Men and women from the general population who were shown neutral and feeding still images while listening to audio recordings of neutral and feeding stories subjectively rated feeding stimuli as more sexually arousing than neutral stimuli (Terry et al., 2012).

Additionally, a minority of both men and women from homosexual and heterosexual communities have reported gaining weight for sexual pleasure of their partners (Prohaska, 2013). Those who gain sexual arousal from making their partners obese (i.e., 'feeders') may compensate for this particular need via fantasising about feeding someone to a state of morbid obesity that would result in immobility (Prohaska, 2014). From this point of view, mukbang

could also facilitate sexual compensation for feeders (i.e., a person who feeds the feedee for sexual arousal) through presenting excessive eating on camera. In fact, feeders could go as far as viewing live mukbang shows where they can instruct mukbangers what and how much to eat, simulating the act of feeding someone via mukbang. Nevertheless, given that men and women equally fantasise about fetishes (Yule et al., 2017), watching others eat may serve as a sexual fetish for some individuals.

Another aspect of mukbang watching was its entertainment uses. The reviewed papers and articles emphasised that the sounds produced during mukbang may provide an Autonomous Sensory Meridian Response experience for some of the viewers that may lead to happiness, relief, and have entertainment value (Choe, 2019; Pettit, 2019; Woo, 2018). In this scenario, viewers become more interested in the sounds produced by the act of eating than the consumption itself (Schwegler-Castañer, 2018). This observation that mukbang is being watched for entertainment purposes, concurs with the studies from other online activity use literature. For instance, individuals engaged in social media use for entertainment purposes (Horzum, 2016). Similarly, the online gaming literature has identified recreation as one of the motives that drives individuals to engage in gaming (Demetrovics et al., 2011). Some youngsters consider pornography watching as entertaining and watch pornography for entertainment in order to cope with their boredom (Rothman et al., 2015). Mukbang also harbours entertaining elements with different mukbangers who demonstrate a variety of different behaviours. For instance, some mukbangers can entertain in their videos by giving themselves food challenges (e.g., finishing a specific amount of food in a very short period of time) while others may entertain their viewers by engaging in bizarre and unpredictable behaviours, showing odd and extreme eating styles (Hong & Park, 2018).

Another aspect of mukbang watching was its use as an escape from reality. The extant literature has theorised that individuals with a desire to escape and watch mukbang videos include those

who (i) were hospital patients, (ii) have fast-paced and hyper competitive ways of life, (iii) have a sense of guilt and stress about being fat, and/or (iv) are bored (Bruno & Chung, 2017; Hakimey & Yazdanifard, 2015). This is in line with the notion that one of the fundamental functions of online activities is their use as an escape from reality to deal with unpleasant situations (Bessiere et al., 2008). For instance, adults spend excessive time on online gaming to escape from negative emotions such as nervousness, sadness, and anger (Kim et al., 2017). College students have used social media sites (e.g., *Facebook*) to get away from real world worries and problems (Kwon et al., 2013). Escape serves as the central reason for gambling even though it does not solve gamblers' long-term problems (Wood & Griffiths, 2007). Mukbang watching can also provide viewers the sought after escape mechanism from real world with its different social, sexual, and entertainment features, especially those videos where the mukbanger talks and interacts about their daily life, and which might detract viewers from their own real-life problems and unpleasant reality (Hong & Park, 2018).

Another important aspect of mukbang watching is its use as a form of vicarious eating. Both academic papers and newspaper articles have theorised that some viewers who are on diets, who love food, and who want to obtain satisfaction from watching the consumption of a wide range of different food watch mukbang videos (Bruno & Chung, 2017; Donnar, 2017; Hakimey & Yazdanifard, 2015). Watching mukbang appears to help such individuals satisfy food cravings, experience the feeling of binge-eating themselves, and have a vicarious satiation via visual and audio stimulation (Choe, 2019; Gillespie, 2019). This is in line with the extant literature. For instance, viewers have been reported to achieve vicarious satisfaction from viewing fetish-themed pornography movies (Brennan, 2017). Vicarious viewing serves as a compensation of acts that an individual would never perform in real life and/or as a fulfilment of known experiences regarding the watched act via triggering a memory (Brennan, 2017). Similarly, gaming has also been reported to be preferred as a leisure activity because it provides

vicarious satisfaction of making the impossible appear possible (Lee et al., 2016). Moreover, feeling vicarious satisfaction is an important motive in watching reality television programmes (Kim et al., 2017). Consequently, the review of the existing literature suggests that mukbang watching is another online activity that could be used to fulfil virtual satisfaction and compensation.

Several studies have theorised that mukbang watching might have negative consequences for the viewers including (i) increased consumption of food because of social comparison or mimicry, (ii) alteration of viewers' perception of food consumption and thinness, eating, health, table manners, eating manners because of modelling of bad behaviours, and (iii) obesity and different eating disorders because of glorifying binge eating (Bruno & Chung, 2017; Donnar, 2017; Hong & Park, 2018; Park, 2018; Shipman, 2019; Spence et al., 2019). On the other hand, mukbang watching might promote positive effects for viewers including alleviation of social isolation via creating a sense of belongingness to a community, subjective closeness for those who seek companionship and a dinner partner, and fulfilment of physical and sentimental hunger for those who are on a diet and/or live in single-person households (Donnar, 2017; Hong & Park, 2018).

These theoretical assumptions on potential consequences of mukbang found in the present review concur with the existing studies that have investigated consequences of other online activities. For instance, in a systematic review of the effects of online gaming, game players were reported to experience enjoyment, feeling of achievement, friendship, and a sense of community as a result of gaming (Sublette & Mullan, 2012). Gambling has been positively related to undesired interpersonal, psychosocial, and financial consequences among adolescents (Ricijas et al., 2016). Some of the negative consequences of internet pornography consumption were diminishing sexual interest towards potential real-life partners, having an abnormal sexual

response, decreased social integration, and elevated conduct problems (Owens et al., 2012; Pizzol et al., 2015; Rothman et al., 2015).

Even though several studies have addressed a range of positive and negative consequences of mukbang watching, there was only one newspaper article that argued that mukbang watching could turn into a problematic (i.e., addictive) behaviour for some of its users due to its social facilitation features. Indeed, obtaining social gratifications and compensating unattained offline social needs using a specific online activity could promote addictive use of that activity (Kardefelt-Winther, 2014). For instance, meeting new individuals and socialising via social media sites has been positively associated with problematic social media use (Kircaburun et al., 2018). Those who formed virtual friendships and relationships in gaming platforms have higher rates of online gaming addiction than those who did not (Kuss & Griffiths, 2012b). Similarly, both forming intimate connections with mukbangers and constructing social relationships with other mukbang viewers might promote repeated use of mukbang videos for social gratifications, and in turn, lead to addictive mukbang watching (AMW).

Although the reviewed publications did not directly discuss or theorise about addictive mukbang watching, in addition to social uses of mukbang, there are several gratifications obtained from mukbang watching (e.g., sexual, entertainment, escapist, and vicarious eating) that could turn normal mukbang watching into AMW. For instance, those individuals who perceive mukbang as a sexual fantasy could become addictive mukbang viewers because fantasising motives are strong predictors of addictive use of online sexual activities (Wéry & Billieux, 2016). Using social media for entertainment has been positively associated with problematic social media use (Kircaburun et al., 2018), which may indicate that those who can entertain themselves via watching mukbang could become addictive mukbang viewers. Escape is one of the key motivations that can turn some non-problematic activities such as gambling, gaming, and pornography use into problematic behaviours in attempts to create positive mood

modification (Király et al., 2015; Kor et al., 2014; Wood & Griffiths, 2007), indicating that those successfully escape their unpleasant reality via watching mukbang could become addictive mukbang viewers. Finally, those who frequently diet and have different eating disorders may also become excessive mukbang watchers in an attempt to compensate for actual eating via having the satisfaction of vicarious pleasure of eating by watching others binge eat.

2.5 Limitations

Thorough and transparent mapping methods of evidence found in a specific area are key strengths of scoping studies. The technical challenges involving time and the dynamic nature of the research area being investigated should be taken into account (Davis et al., 2009). From this point of view, the first limitation of the present scoping study was that some of the data were collected from newspaper articles. This limitation raises concerns regarding the quality of data collected. Second, some of the studies identified and reviewed in the present study were purely theoretical and not based on anything empirical. This reliance on theoretical arguments makes some of the discussions in the review somewhat speculative.

2.6 Conclusion

Nevertheless, the present scoping study is the first to review the extant literature theoretically discussing or empirically examining the psychological characteristics of mukbang viewers and consequences of mukbang watching from a psychological (and related disciplines) perspective. Even though individuals have been watching mukbang for over a decade, very little is known about this behaviour. Consequently, the present review contributes to very scarce literature and appears to indicate that mukbang viewers are those who seek social, sexual, entertainment, escapist, and/or eating compensations. Furthermore, mukbang watching may promote both positive consequences (e.g., alleviation of loneliness and social isolation) and negative consequences (e.g., disordered eating and AMW). Future studies should empirically examine

the theoretical assumptions posited in the present review. Increasing the knowledge of this phenomenon may be important in minimising its negative consequences.

Based on the present review's findings, problematic use of mukbang watching might facilitate symptoms of problematic sexual behaviours, internet addiction, and eating disorders. From this perspective, successful treatment strategies used to reduce these problems may also be used to cope with AMW. For instance, one study using a positive psychology intervention reported a decrease in the internet addiction rate of 71% in an experiment group compared to a control group (Khazaei et al., 2017). Furthermore, specific forms of cognitive-behavioural therapy have been effective for several eating disorder presentations both in the short-term and long-term (Brownley et al., 2016). Similarly, group cognitive-behavioural therapy that have been successfully used to reduce compulsive sexual behaviours (Sadiza et al., 2011) could perhaps also be used for AMW.

CHAPTER 3: Methodology

3.1 Introduction

The main objectives of this thesis are to (i) develop psychometric tools to assess AMW and mukbang watching motivations, (ii) explore the personality, emotional, psychological, and mental health correlates of AMW, and (iii) examine addictive symptoms related to mukbang watching. It was considered that using quantitative and qualitative methodologies would fulfil the objectives of this thesis. As a result, the thesis utilised a mixed-method approach, which involves integrating both quantitative and qualitative methods in a series of studies.

The mixed-methods approach is a developing methodology that is gaining popularity among researchers who seek to integrate various types of data to gain robust insights into research questions, leading to a more profound understanding of complex phenomena. First, two psychometric studies were used to develop and validate two different scales to assess AMW and one scale for mukbang watching motivations. Second, four cross-sectional survey studies were used to investigate potential correlates of AMW in order to further understand the nature of AMW. Third, a qualitative interview study was conducted to explore the addictive symptoms of mukbang watching among a group of frequent mukbang viewers. Consequently, the present chapter summarises the research methods used in this thesis by examining their theoretical frameworks and application properties.

3.2 Quantitative research

Quantitative research is a research approach used to collect, analyse, and interpret numerical data in order to understand patterns, relationships, and trends in a population or sample. It involves the use of statistical and mathematical techniques to analyse data and draw conclusions based on numerical evidence (Howitt & Crammer, 2011). Quantitative research

typically follows a deductive approach, where the researcher starts with a hypothesis or research question, collects data through structured surveys, experiments, or other standardised methods, and uses statistical analysis to test and validate the hypotheses or answer the research questions. It aims to establish cause-and-effect relationships and make generalisations about a larger population based on a smaller sample (Kline, 2011). Quantitative research is based on a positivist epistemology, which assumes that there is an objective reality that can be measured and observed, and that data should be collected and analysed in an objective, systematic, and replicable manner. Researchers strive to minimise personal biases and emotions during data collection and analysis, and rely on statistical methods to draw conclusions and make interpretations (Håkansson, 2013). Therefore, quantitative research is often general, unbiased, and deductive. Quantitative research primarily focuses on establishing cause-and-effect relationships and aims to test theories and hypotheses through systematic observations. It employs predetermined research designs that involve data collection followed by data analysis to evaluate theories and models (Setia, 2016).

3.3 Qualitative research

Qualitative research is an approach to research that involves the exploration and analysis of non-numerical data, with a focus on describing and categorising the qualitative aspects of the data (Howitt & Cramer, 2011). It seeks to capture the subjective experiences, perspectives, and meanings of individuals or groups being studied. Qualitative research is characterised by its contextual, subjective, and inductive nature. Qualitative research is typically inductive, meaning that it starts with observations and data collection, and uses these observations to generate hypotheses or theories. One of the key features of qualitative research is its emphasis on context and the understanding of social and cultural nuances. It seeks to explore the complexities and diversity of human experiences, behaviours, and perspectives, rather than relying solely on numerical data. (McCaslin & Scott, 2003). This subjective orientation

requires researchers to be actively involved in the research and data analysis process in order to gather rich, detailed, and context-specific information. The competencies and capabilities of the researcher are particularly important in qualitative research, as this approach is employed when the aim is to understand the intricacies of a phenomenon within its natural context, especially when there is limited existing research on the topic (McCaslin & Scott, 2003).

3.4 Quantitative vs. qualitative methods

Quantitative and qualitative methods are two methodologies used in research that have different theoretical frameworks. Quantitative methods are used to test hypotheses. Therefore, in studies that use quantitative methods, it is necessary to find numerically measurable hypotheses using statistical analysis (Håkansson, 2013). The ontological stance followed by the quantitative methods is realism. Realism argues that there is an absolute truth and that this truth can be reached through data-based research (Scotland, 2012). Quantitative methods follow the perspective of objectivism framed within the positivist paradigm. The positivist approach has several advantages. These include (i) results can be tested by other researchers using the same conditions, (ii) findings are obtained by objective measurements, and (iii) findings can be generalised (Scotland, 2012). Furthermore, quantitative research often involves data analysis using statistical software, which allows for efficient and systematic analysis of large datasets. Structured methods used for data collection and analysis in quantitative design result in precise and accurate findings (Howitt & Crammer, 2011).

The most important disadvantage of the positivist approach is that it cannot enable in-depth examination of the relationships between the investigated variables. This is because the positivist approach causes the findings to be descriptive, difficult to understand, and complex (Alharahsheh & Pius, 2020). Consequently, studies are often derived from a theory and hypotheses and are formed according to the theory used. It tries to find empirical evidence that supports the theory and hypotheses using research. Some other disadvantages of quantitative

methods include: (i) limited depth of understanding of the contextual nuances and complexities of the research topic due to numerical data and statistical analysis, (ii) limited ability to adapt or change the research approach during the study based on emerging insights or unexpected findings due to a predetermined research design and data collection methods, (iii) reduction of complex phenomena into simplified variables and measures, leading to failure in fully capturing the multidimensionality and complexity of the research topic, (iv) testing existing theories and hypotheses, which may limit the exploration of new research areas or emerging phenomena that do not fit into established frameworks or theories (Creswell & Creswell, 2017; Scotland, 2012).

Qualitative methodologies are included in the interpretative paradigm. The aim of qualitative methodologies is to analyse subjective experience because it is assumed that individuals create depth in meaning (Alharahsheh & Pius, 2020). This notion is derived from the idea that there can be as many realities as individuals and that realities are constructed by the individual (Scotland, 2012). Scholars have summarised several advantages for using qualitative methods including (i) obtaining in-depth exploration and understanding of complex phenomena because it delves into the nuances and details of human behaviour, experiences, and perspectives, (ii) allowing researchers to modify their approach, questions, or data collection techniques during the research process based on emerging findings or new insights, (iii) capturing the perspectives, voices, and experiences of the participants themselves by directly engaging with participants, listening to their stories, and understanding their lived experiences, (iv) allowing contextual understanding that provide insights into how the phenomenon is shaped by and influences its surroundings which leads to a more holistic understanding of the research topic, and (v) allowing for the generation of hypotheses or theories that can be further tested using quantitative methods (Howitt & Crammer, 2011; Morse, 2015).

However, qualitative examination is not without its limitations. Qualitative research is often subjective and relies on the researcher's interpretations and judgments, which can introduce bias into the findings (Rolfe, 2006). Due to the generally small sample sizes and context-specific nature of qualitative research, findings may not be easily generalised to larger populations or different settings (Morse, 2015). Qualitative research requires substantial time and effort for data collection, analysis, and interpretation, which can be labour-intensive and costly (Creswell & Creswell, 2017). Qualitative research methods are often flexible and may lack standardised procedures, leading to potential variability in data collection and analysis (Rolfe, 2006). Qualitative data analysis can be complex and may require expertise in qualitative research methods, making it potentially challenging for researchers without extensive training in qualitative analysis (Creswell & Creswell, 2017).

3.5 Why combine quantitative and qualitative methods?

Both quantitative and qualitative research methodologies are related to different epistemological positions that reflect different perspectives on what constitutes valid knowledge. However, scholars suggest that this does not preclude the possibility of combining these methodologies (Slevitch, 2011). In fact, researchers can enhance their findings by integrating quantitative and qualitative data in a way that using only one type of data would not permit (Hanson et al., 2005). When a research question cannot be fully addressed by a single research method, and the researcher aims to examine measurable relationships between variables through quantitative research while also gaining deeper insights through qualitative findings, the use of mixed-methods is warranted (Greene & Caracelli, 2003). Consequently, a number of scholars advocate for pragmatism as the appropriate philosophical paradigm for mixed-methods research (Creswell, 2014). Pragmatism posits that the research topic should be prioritised over other factors, such as techniques or theoretical frameworks (Creswell, 2014).

From this perspective, researchers should select the methodologies that most effectively address their specific research issue.

There are numerous documented advantages to integrating quantitative and qualitative methods in research. Mixed-methods research can yield a more comprehensive and nuanced understanding of research questions or issues. Quantitative data can show statistical patterns and trends, while qualitative data can provide in-depth insights, context, and rich descriptions, leading to a more holistic understanding of the phenomenon under study (Creswell & Clark, 2017). The utilisation of mixed-methods enables triangulation, a process that involves comparing and contrasting findings obtained from diverse data sources or methods. Triangulation can enhance the validity and reliability of research findings by strengthening the overall evidence base and mitigating potential bias through the convergence of multiple perspectives (Creswell, 2014). Quantitative research is often robust in terms of generalizability and statistical validity, while qualitative research excels at exploring complex, contextual, and subjective aspects of a phenomenon. By combining the strengths of both approaches, mixed-methods research can overcome limitations and provide a more robust and comprehensive research design (Hanson et al., 2005). Mixed-methods research also offers flexibility in research design, allowing researchers to tailor their approach to suit the research question or issue at hand. Researchers can select the most appropriate methods and techniques for each phase of their study, adapting their approach as needed (Johnson & Onwuegbuzie, 2004).

Consequently, this thesis utilised both quantitative and qualitative research methods to collect data, thereby addressing the limitations of each research design. However, quantitative methods were utilised as the dominant method. Initially, psychometric scales were developed to enable broader research with larger sample sizes. Subsequently, drawing on the evidence and data gathered from the psychometric phase, survey studies were conducted to explore the correlates of AMW, aiming to investigate the nature and underlying mechanisms of this

emerging addictive behaviour. Finally, the qualitative investigation was included as part of a validating quantitative data model/variant of the triangulation design approach to mixed methods.

Mixed-methods research involves several typologies and designs that combine quantitative and qualitative methods. According to Morgan (1998), these designs include: (i) qual followed by QUANT, (ii) quant followed by QUAL, (iii) QUANT followed by qual, and (iv) QUAL followed by quant. The order of the designs is decided based on the relative importance of each method. The present thesis used the third design (i.e., QUANT followed by qual) and began with a pilot psychometric study that provided preliminary evidence of the potential risky use of mukbang watching. This was followed by additional quantitative studies to supplement the initial findings. In the final stage, after establishing the potential existence of AMW among a minority of mukbang viewers using cross-sectional studies, qualitative examination was used to validate the findings of the quantitative data model by providing additional insights, explanations, or context on the symptoms of AMW. The subsequent sections delineate the quantitative and qualitative approaches employed in this thesis. The following section presents a detailed description of the quantitative methods, followed by an overview of the qualitative methods.

3.6 Methods of quantitative research

The methods employed in the present thesis for quantitative data collection involved the use of surveys, known for their efficiency as they are relatively quick and require less time compared to other data collection methods (Johnson & Onwuegbuzie, 2004). The quantitative data collection in this study utilised a cross-sectional research design in which variables were not manipulated (Kesmodel, 2018). Cross-sectional studies are frequently employed in non-experimental research to explore the associations between risk factors and the dependent variable (Howitt & Crammer, 2011). This understanding of the connections between variables

can offer valuable insights and lay the groundwork for formulating hypotheses in subsequent research. In cross-sectional studies, data are collected from a population with the aim of obtaining a maximum number of responses. Therefore, careful consideration should be given to the selection of relevant measures to maintain optimal response rates when designing a cross-sectional study. Lengthy surveys, for example, may cause discomfort to participants and increase the likelihood of dropouts (Johnson & Onwuegbuzie, 2004).

Cross-sectional studies offer the advantage of collecting data from multiple participants at a single point in time, which can save time and resources. These studies provide a snapshot of a population at a specific moment, allowing for the description of population characteristics or behaviours at that time (Kesmodel, 2018). Additionally, cross-sectional studies can identify associations or relationships between variables. By collecting data on multiple variables simultaneously, researchers can examine cross-sectional associations between variables, which can help generate hypotheses for further research (Levin, 2006). However, it is important to note that a limitation of cross-sectional studies is their inability to establish causality. As data are collected at a single point in time and variables are not manipulated, definitive causal inferences cannot be drawn from cross-sectional studies (Levin, 2006).

The analysis of quantitative data in this thesis involved several methods, including exploratory factor analysis (EFA), confirmatory factor analysis (CFA), hierarchical regression analysis, path analysis, and structural equation modelling (SEM). EFA was employed in the preliminary examination of factor structures during the development and validation of psychometric scales. As a multivariate technique, EFA evaluates the correlations among different variables and attempts to group them into meaningful factors (Williams et al., 2010). This approach can assist in revealing the underlying structure of a variable set, facilitating comprehension of variable relationships and enhancing the study of the investigated phenomenon (Ford et al., 1986). By grouping similar variables into factors, EFA also assess the validity and reliability of scales,

while minimising the number of variables required for measurement, thereby facilitating easier scale administration (Williams et al., 2010). However, EFA also has some limitations, including subjective interpretation in determining the number of factors to retain and how to label them, susceptibility to sampling errors with small sample sizes, and potential overextraction or under-extraction of factors if the researcher does not exercise caution in selecting the appropriate number of factors to retain (Tabachnick & Fidell, 2007). Nevertheless, EFA is a commonly employed technique in the field of psychology for scale development and validation, allowing for the identification of underlying variable structures, minimising the number of variables necessary for measurement, and providing valuable insights for future research (Williams et al., 2010).

In the scale development phase, CFA was utilised as a follow-up to EFA to confirm the factor structures obtained. CFA is a statistical technique that is distinct from EFA in that it is driven by hypotheses rather than being exploratory (Jackson et al., 2009). It is employed to verify or evaluate the factor structure of a set of variables based on theoretical assumptions. To do this, a model is specified that includes the number of factors, the connection between the factors, and their associated observed variables, as well as any restrictions or assumptions regarding the factor loadings, correlations, and error variances (DiStefano & Hess, 2005). The model is then tested against the data to determine how well it fits. A well-fitting model indicates that the hypothesised factor structure accurately represents the data, while a poorly fitting model indicates that the factor structure may require modification (Jackson et al., 2009). CFA provides an unbiased and clear approach to scale development and validation. However, pre-specifying the factor structure may limit the ability to identify unforeseen factors. Furthermore, CFA can be difficult to interpret, and the results can be affected by the choice of goodness-of-fit indices used to evaluate the model (Floyd & Widaman, 1995). Nevertheless, CFA is a useful

method in scale development and validation, providing a hypothesis-driven approach to examining the factor structure of a set of variables.

In the context of the present thesis, hierarchical regression analysis was used to test convergent validity of PMWS in Chapter 5 by including mukbang watching motivations as independent variables and AMW as the dependent variable. Hierarchical regression analysis is a statistical technique used to explore the relationship between independent variables and a dependent variable, while accounting for the effects of other variables (Radmacher & Martin, 2001). This method allows for the examination of the unique contribution of each block of variables in predicting the dependent variable, beyond the variance accounted for by the previous blocks (Howitt & Crammer, 2011). It enables researchers to investigate whether the inclusion of additional predictor variables significantly improves the predictive power of the model and whether the effects of earlier entered variables change after the inclusion of subsequent blocks of variables. Moreover, hierarchical regression analysis helps identify which variables are most important in explaining the variance in the outcome variable, providing insights into the relative importance of different predictor variables (Howitt & Crammer, 2011).

Path analysis was also used in this thesis to investigate correlational relationships among variables. Path analysis is a statistical method used in quantitative data analysis to examine the relationships among multiple variables in a hypothesised model (Kline, 2015). Path analysis involves the use of graphical models that depict the hypothesised relationships between variables as arrows or paths, representing the direction and magnitude of the relationships. Path analysis can help researchers test complex theoretical models that involve multiple variables and pathways. It allows for the identification of direct effects, which are the relationships between variables that do not pass through other variables, and indirect effects, which are the relationships that are mediated by one or more intermediate variables (Kline, 2015). Path analysis can also help identify the strength and significance of each path, providing insights

into the relative importance of different variables in explaining the variance in the outcome variable. While path analysis does not establish causality definitively, it can provide evidence for potential causal relationships between variables when combined with appropriate study design and control for confounding variables (Kline, 2011).

Path analysis, which is a subset of SEM, focuses on estimating linear relationships among variables in a model without involving latent variables, which are unobserved variables inferred from multiple indicators. In contrast, SEM is a more comprehensive approach that allows for the inclusion of latent variables in addition to observed variables and complex relationships (Howitt & Crammer, 2011). Path analysis is typically used for simpler models with a smaller number of variables and assumes that all variables are directly measured. On the other hand, SEM can handle more complex models with multiple latent variables and observed variables. SEM includes fit indices, such as root mean square error of approximation (RMSEA), comparative fit index (CFI), chi-square, among others, to determine the goodness of fit of the model to the data (Kline, 2015).

SEM typically requires a larger sample size and more complete data to accurately estimate the parameters in the model, especially when latent variables are involved. In situations where data limitations are present, path analysis may be a more viable option due to its relatively simpler requirements (Kline, 2015). In the present thesis, Chapters 4 and 5 employed EFA and CFA in order to examine the psychometric properties of newly developed scales. Chapters 6, 7, and 9 employed path analysis to investigate the direct and indirect relationships between emotional and psychological determinants and AMW. Additionally, Chapters 4 and 5 utilised SEM for CFA, while Chapter 9 employed SEM to examine the direct association between AMW and internet addiction as well as disordered eating. By employing different data analysis methods for various associations among variables, the thesis mitigates the limitations of each method, contributing to a more robust analysis.

3.7 Methods of qualitative research

In the qualitative study, data on addictive symptoms of mukbang watching were collected using a semi-structured interview approach. Semi-structured interviews are a type of qualitative research method that involves flexibility and openness in conducting interviews. During semi-structured interviews, the interviewer follows a general outline or set of topics to guide the conversation, while also allowing for adaptability and probing based on the responses of the interviewee (Rubin & Rubin, 2011). This approach enables rich and in-depth data collection because it allows interviewees to freely share their perspectives, experiences, and insights. Semi-structured interviews are commonly used in qualitative research to explore complex and nuanced topics, providing researchers with an opportunity to gather detailed and comprehensive data that contributes to a deeper understanding of the research phenomenon (Kallio et al., 2016).

The interviews were conducted in a semi-structured format, which provided a balance of consistency and flexibility (Robinson, 2014). The interview guide used in this study was developed based on Kruger and Casey's (2015) framework, with the initial questions being broad to explore participants' mukbang behaviour. To assess the presence of addiction symptoms among mukbang viewers, open-ended questions were included in the interview guide, using the diagnostic criteria for gaming disorder in the DSM-5 as a framework for investigating AMW (APA, 2013). This approach ensured that there was consistency across interviews while also allowing for important topics to be covered based on the perspectives of the participants.

The data obtained from interviews were analysed using directed content analysis, which is a qualitative data analysis approach that involves the utilisation of a predefined coding framework or set of categories to analyse qualitative data (Hsieh & Shannon, 2005). Directed content analysis is often employed when researchers have a specific theoretical or conceptual

framework that they wish to apply to their data analysis. The coding framework is developed based on existing theories, previous research, or specific research questions, and it is used as a guide for analysing the data (Elo & Kyngäs, 2008). In directed content analysis, the coding framework acts as a lens through which the data are examined. The researcher systematically applies the predefined codes or categories to segments of text in the data that align with the coding framework (Downe-Wambolt, 1992). This involves categorising the data into predetermined codes or categories that are relevant to the research question or objective.

The coding process in directed content analysis involves identifying and labelling meaningful units of text that represent the central concepts, themes, or variables of interest in the data (Hsieh & Shannon, 2005). This may entail coding for specific words, phrases, or concepts, as well as capturing the context, nuances, and interrelationships among the codes or categories. The findings obtained from directed content analysis are then interpreted in light of the research question or objective, using a theoretical or conceptual framework, previous research, or specific research questions as a guiding framework (Graneheim & Lundman, 2004). In the present thesis, a predetermined theoretical framework based on the symptoms used in the official diagnostic criteria of gaming disorder in the DSM-5 was utilised. Each of the nine symptoms was explored and included as key themes. A cyclical process was utilised, where transcripts were systematically coded and re-coded until no novel themes or symptoms of addiction surfaced. Data that did not fit into any of the nine DSM-5 criteria were carefully re-examined to describe different manifestations, which were then incorporated into one of the nine key themes if found to be related to.

3.8 Conclusion

In the field of psychology, many areas of research are complex and multifaceted. Mixed-methods research, combining quantitative and qualitative methods, is an increasingly popular approach to tackle research complexities. Quantitative methods provide objective measurement

of reality, while qualitative methods allow for in-depth exploration of the complexity of a phenomenon, leading to a deeper understanding. The mixed methods approach equips researchers with a broader range of tools to address their research questions. Despite potential challenges, the researcher holds the belief that utilising diverse data types can lead to valuable insights and a deeper understanding of the research question at hand.

In today's ever-changing research landscape, interdisciplinary, complex, and dynamic issues require researchers to combine different methods. In this thesis, quantitative methods have been utilised to develop assessment tools for examining AMW and its correlates, while acknowledging the significance of qualitative research to explore the addictive symptoms associated with mukbang watching. This approach informed the investigation of potential factors related to AMW, with the aim of gaining a deeper understanding of this emerging behaviour. The subsequent sections will outline the empirical chapters that investigated the phenomenon of AMW.

CHAPTER 4: Development and validation of the Mukbang

Addiction Scale

4.1 Introduction

As was concluded in Chapter 2, mukbang watching might have negative consequences for the viewers including (i) increased consumption of food because of social comparison or mimicry, (ii) alteration of viewers' perception of food consumption and thinness, eating, health, table manners, and eating manners because of modelling of bad behaviours, and (iii) obesity and different eating disorders because of the glorification of binge eating (Bruno & Chung, 2017; Donnar, 2017; Hong & Park, 2018; Park, 2018; Shipman, 2019; Spence et al., 2019). It was argued that mukbang watching may also become addictive for a minority of people who use mukbang for social and eating compensation (Kircaburun et al., 2021a).

According to the compensatory internet use model, compensating unattained offline needs using a specific online activity could lead to the development and maintenance of addictive use of that activity (Kardefelt-Winther, 2014). For instance, compensating social needs by social media use and online gaming have been positively associated with both addictive social media use and online gaming addiction (Kircaburun et al., 2018). Compensating real life sexual needs in online contexts by having sexual fantasies could also lead to higher addictive use of online sexual activities (Wéry & Billieux, 2016). Similarly, those who use social networking sites for entertainment report higher addictive social media use (Kircaburun et al., 2018; Kuss & Griffiths, 2012b). Furthermore, escapism is one of the key motivations that can facilitate some non-problematic activities such as gambling, gaming, and pornography use into addictive behaviours by creating positive mood modifying experiences (Király et al., 2015; Kor et al., 2014; Wood & Griffiths, 2007).

From the compensatory internet use model perspective (Kardefelt-Winther, 2014), it is hypothesised that some individuals could become addictive mukbang viewers because mukbang facilitates the compensation of different offline needs including social interaction, sexual fantasy, entertainment, escape from reality, and vicarious eating (Bruno & Chung, 2019; Choe, 2019; Donnar, 2017). Consequently, the present study focused on the possible addictive aspect of mukbang watching.

In order for addictive mukbang watching (AMW) to be examined, valid and reliable psychometric tools that can be used to assess AMW are needed. To the best of authors' knowledge, no previous study has examined AMW and this may be because there are no assessment tools validated to assess AMW. Based on the aforementioned rationale, the present study developed the Mukbang Addiction Scale (MAS) by conducting a psychometric validation. For this purpose, the previously validated Bergen Facebook Addiction Scale (BFAS) (Andreassen et al., 2012) was modified by replacing the word 'Facebook' with 'mukbang watching'.

The BFAS was chosen because it assesses a behaviour within social media platforms (like mukbang watching), has been widely used, and has been validated in several languages (Andreassen et al., 2013; Phanasathit et al., 2015; Pontes et al., 2016; Wang et al., 2015; Yurdagül et al., 2019). The BFAS was also used to develop the MAS because of its brevity and sound theoretical basis that reflects core components of behavioural addiction (Griffiths, 2005), which presumes that behavioural addictions are biopsychosocial phenomena comprising six core components: salience, mood modification, tolerance, withdrawal symptoms, conflict, and relapse (Griffiths, 2005).

4.2 Methods

4.2.1 Participants and procedure

Participants were undergraduate mukbang viewers who completed an online survey. The survey was promoted on different online courses of a Turkish university's distance learning centre. Students were informed that participation in the study was anonymous and voluntary, and would not affect their grades. A total of 236 mukbang viewers whose ages ranged between 18 and 27 years ($M_{age} = 20.50$ years, $SD_{age} = 1.62$; 62% female) participated in the study (see Table 1 for full list of participant variables). The minimum sampling error of a population consisting of 236 participants at the 95% confidence interval ($z=1.96$) was ± 6.38 . Ethical approval for the study was taken from the university's ethics committee and complied with the Helsinki declaration. No compensation (e.g., money, vouchers, course credit, etc.) was provided for participation.

Table 4. 1. Participants' demographic characteristics and frequency of mukbang watching

Variable	N	%
Gender		
Males	89	37.7
Females	147	62.3
Grade		
1	29	12.3
2	148	62.7
3	45	19.1
4	14	5.9
Faculty		
Economics and administrative sciences	26	11
Communication	18	7.6

	Humanities and social sciences	22	9.3
	Business administration	14	5.9
	Vocational school	34	14.4
	Architecture	41	17.4
	Engineering	55	23.3
Body mass index			
	Underweight	43	18.2
	Normal weight	139	58.9
	Overweight	45	19.1
	Obese	8	3.4
	Extremely obese	1	0.4
Frequency of daily use			
	No daily use	102	43.2
	0-1 hours	99	41.9
	1-2 hours	19	8.1
	2-3 hours	6	2.5
	3-4 hours	4	1.7
	More than 4 hours	6	2.5

4.2.2 Measures

Demographics and mukbang usage: Participants' demographic characteristics relating to their gender, age, grade level, faculty, height, weight, and daily frequency of mukbang watching were asked in the survey.

Mukbang Addiction Scale (MAS): The MAS (see Table 2) was developed by replacing the word 'Facebook' with 'mukbang watching' in the Turkish form (Tosuntaş et al., 2020) of the Bergen Facebook Addiction Scale (Andreassen et al., 2012). The MAS comprises six items (e.g., "How

often in the past year have you spent a lot of time thinking about mukbang or planned watching mukbang?”) on a 5-point Likert scale from “*very rarely*” to “*very often*” that assess six components of addiction (i.e., salience, conflict, withdrawal, mood modification, tolerance, and relapse) outlined in the biopsychosocial framework of addiction (Griffiths 2005).

Table 4. 2. MAS items and their mean scores, standard deviations, and communalities

	Mean (S.D.)	Communalities
How often during the last year have you ...		s
Item 1. Spent a lot of time thinking about watching mukbang or planned watching mukbang?	1.54 (.92)	.72
Item 2: Felt an urge to watch mukbang more and more?	1.54 (.93)	.77
Item 3. Watched mukbang in order to forget about personal problems?	1.59 (.97)	.80
Item 4. Tried to cut down on the mukbang watching without success?	1.45 (.90)	.85
Item 5. Become restless or troubled if you have been prohibited from watching mukbang?	1.53 (1.01)	.75
Item 6. Watched mukbang so much that it has had a negative impact on your job/studies?	1.43 (.89)	.87

4.2.3 Statistical analysis

All statistical analyses were carried out using SPSS 23 and AMOS 23 software. First, frequency and descriptive statistics were computed with regard to gender, age, faculty, body mass index, and frequency of mukbang watching. Second, construct validity of the MAS was assessed using

exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Third, criterion validity was assessed using structural equation modelling. These analyses were carried out with 5000 bootstrapped samples and 95% bias-corrected confidence intervals which addressed the risk of potential deviations from normality.

In order to determine goodness of fit, root mean square residuals (RMSEA), standardised root mean square residuals (SRMR), comparative fit index (CFI), and goodness of fit index (GFI) were checked. According to Hu and Bentler (1999), RMSEA and SRMR lower than .05 indicate good fit and RMSEA and SRMR lower than .08 suggest adequate fit; CFI and GFI higher than .95 is good and CFI and GFI higher than .90 is acceptable.

4.3 Results

4.3.1 Descriptive statistics

Frequencies and ratios of daily mukbang watching and demographic characteristics of participants are presented in Table 1. Students from 12 different faculties participated in this study. Among them, the top five faculties represented were as follows (from highest to lowest respectively): engineering (23%), architecture (17%), vocational school (14%), economics and administrative sciences (11%), and humanities and social sciences (9%). Moreover, 12% of the participants were freshmen, 63% were sophomores, and 19% were third-grade students. Participants' body mass index (BMI) was calculated using their height and weight information. According to the categorization made by the National Heart, Lung, and Blood Institute (Pisunyer et al., 1998), 18% of the participants were underweight, 59% were normal weight, 19% were overweight, and 4% were obese. With regard to frequency of daily mukbang watching, 42% of the participants indicated watching mukbang less than one hour daily, 8% between 1 and 1 hour 59 minutes, 3% between 2 and 2 hours 59 minutes, 2% between 3 and 3 hours 59 minutes, and 2% four or more hours.

4.3.2 Construct validity

First, EFA was computed to examine the factor structure of the MAS. KMO and Bartlett's test indicated that Kaiser-Meyer-Olkin measure of sampling adequacy was higher than .70 and Bartlett's test of sphericity was significant (Kline, 2014), indicating a good structure (.87; $p < .001$). Initial eigenvalues showed that an extracted one-factor solution explained 79.45% of the variance which was good (Kline, 2014). Extracted communalities of the items ranged between .72 (Item 1) and .87 (Item 6), showing that all items have high loads in the scale (Table 2). Next, CFA was used to confirm the obtained factor structure in EFA. Goodness of fit indices indicated mostly good fit to the data ($\chi^2/df = 2.42$, RMSEA = .08 [CI 90% (.03, .13)], SRMR = .01, CFI = .99, GFI = .98). Standardised regression weights ranged between .74 (item 1) and .95 (item 6), and squared multiple correlations were between .54 and .90, which suggested all items had a significant role in the scale. The results regarding EFA (communalities produced) and CFA (standardised regression weights) of the MAS are presented in Table 2 and Figure 1 respectively. These results indicated that the MAS had good construct validity and can be used to assess Turkish individuals' AMW.

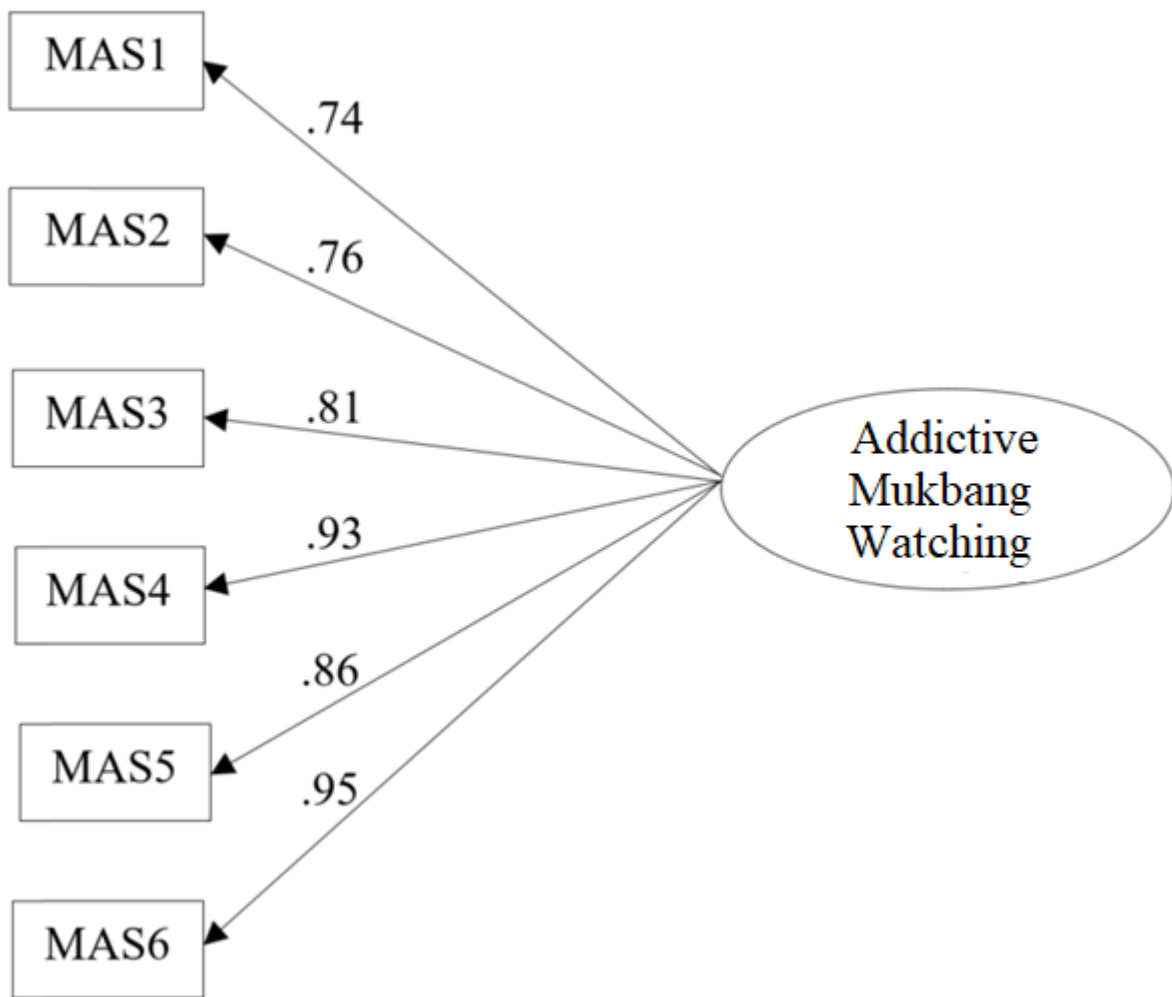


Figure 4. 1. Summary of confirmatory factor analysis of the MAS

4.3.3 Criterion validity

The present study assessed criterion validity using a well-accepted gold standard indicator of the MAS (Bryant et al., 2007). Frequency of daily use of a specific application (e.g., social media) has been shown to be the most consistent indicator of addictive use of that particular application (Griffiths et al., 2014). Therefore, frequency of daily mukbang watching was included into structural equation modelling (SEM) as a predictor of AMW assessed by MAS. The results indicated mostly good fit to the data ($\chi^2/df = 2.20$, RMSEA = .07 [CI 90% (.03, .13)], SRMR = .02, CFI = .99, GFI = .97). The model explained 18% of the variance in AMW ($\beta = .42$, $p < .001$ CI 95% [.26, .58]). The correlation coefficient between frequency of daily

mukbang watching and AMW provided further support for MAS' criterion validity ($r = .42$, $p < .001$ CI 95% [.27, .56]).

4.3.4 Reliability analysis

The reliability coefficient, Cronbach's alpha, of MAS was very high ($\alpha = .95$) and inter-item correlations were also high ($> .50$). Furthermore, the composite reliability of the scale (CR = .92) was above the accepted threshold of .70 (Fornell & Larcker, 1981). These results demonstrate that the MAS appears to have good internal consistency.

4.4 Discussion

The present study conducted a psychometric validation of the MAS including its construct validity, criterion validity, and reliability. The results indicated that the MAS has good validity and reliability for assessing AMW among Turkish participants. Developments in internet technologies have facilitated a variety of online behaviours into individuals' lives (e.g., shopping, gaming, gambling, sex, social networking, etc.), leading to many different forms of gratifications obtained from these activities (Kircaburun et al., 2018). An emerging activity of watching others eat online (i.e., mukbang) has been argued to facilitate social, sexual, entertainment, escape, and eating uses for some individuals (Bruno & Chung, 2017; Choe, 2019; Donnar, 2017; Gillespie, 2019; Woo, 2018). Obtaining these gratifications and constant reinforcements watching mukbang has the potential to transform recreational viewing of mukbang into AMW based on studies examining other behavioural addictions (Kircaburun et al., 2018; Király et al., 2015; Kor et al., 2014; Wood & Griffiths, 2007). Due to the lack of assessment assessment, there is a need for a psychometrically valid and reliable assessment instrument mukbang watching.

Parallel to the aims of the present study, construct validity was tested using EFA and CFA. The extracted one-factor solution explained 79.45% of the variance and extracted communalities

were between .72 and .87, indicating that all items had high contributions (Kline, 2014). The CFA provided further empirical support for the unidimensional structure with adequate to good fit indices (Hu & Bentler, 1999). All item loadings in the final form were above .72 and significant. Despite its one-factor structure, as pointed out by Andreassen et al. (2012), MAS represents the six key components of addiction (i.e., tolerance, mood modification, withdrawal symptoms, salience, relapse, and conflict) outlined in the biopsychosocial framework of addiction (Griffiths, 2005).

In order to investigate the criterion validity of the new scale, the direct effect of daily mukbang watching frequency on MAS was calculated using a structural equation model. Even though there was no empirical evidence regarding the relationship between the former and latter, extant behavioural addictions literature suggests that frequency of use of a specific online activity (e.g., social networking) is one of the most consistent indicators of addictive use of that activity (Griffiths et al., 2014). As expected, frequency of daily mukbang watching was positively (moderately) associated with AMW.

The reliability coefficient of the present scale was very high (.95) and inter-item correlations were also high (>.50). Moreover, the composite reliability of the scale was also very high (.92). These coefficient values were higher than some of the reported reliability of BFAS in previous studies (Andreassen et al., 2012, 2016; Pontes et al., 2016), providing indirect support for the internal consistency of the MAS.

Participants had the highest score on the item that assessed mood modification (i.e., watching mukbang in order to forget about personal problems). This result contradicts the previous studies that validated the BFAS, which reported symptoms of salience (e.g., spending a lot of time thinking about Facebook or planned use of Facebook) and tolerance (e.g., feeling an urge to use Facebook more and more) as having the highest mean scores for Facebook use

(Andreassen et al., 2012). Although using Facebook and watching mukbang are both activities carried out in social media, they differ in structure and content and this may explain why some addiction components differed in importance between the two activities. It may be that individuals simply watched mukbang to escape unpleasant reality or emotions compared to Facebook use. The item that assessed conflict (e.g., watching mukbang so much that it has had a negative impact on job/studies) had the lowest score among the six addiction components. This finding may indicate that for most participants, mukbang watching had low negative consequences on their lives.

4.5 Limitations

There are several limitations that should be taken into consideration when interpreting the results of the present study. The study sample comprised mukbang viewers from a single Turkish university. Therefore, the present findings should be replicated using different samples from different countries and age groups. Second, the present study collected the data using a self-report online survey, which is susceptible to specific biases (e.g., social desirability, random responses, memory recall, etc.). Therefore, future studies should adopt more in-depth methods to investigate AMW (e.g., qualitative interviews and focus groups). Third, the present study was a cross-sectional which restricts making any causal assumptions. Therefore, future studies should use longitudinal studies to investigate possible bidirectional relationships regarding AMW.

4.6 Conclusion

Nevertheless, the present study is the first to develop a psychometrically valid and reliable tool to assess those at risk of AMW, and can be used to assess AMW among Turkish emerging adults. This research provides a valuable contribution to the investigation of a growing phenomenon by validating an assessment tool that could be used to assess AMW.

CHAPTER 5: Development and validation of Problematic Mukbang Watching Scale and Mukbang Watching Motives Scale: A cross-sectional study with adult mukbang watchers

5.1 Introduction

Previous chapters (Chapter 2 and 4) have drawn attention to the potential risk for transformation of recreational mukbang watching into an addictive behaviour among emerging adult mukbang watchers (Kircaburun et al., 2021a, 2021b). In addition to the well-established mental, physical, and psychosocial impairments related to engagement in similar online addictive behaviours including addictive social media use and addictive binge-watching (Flayelle et al., 2019; Van den Eijnden et al., 2016), addictive mukbang watching (AMW) may further lead to stronger exposure to the aforementioned harmful effects of regular mukbang watching. Therefore, it is important to investigate the motivations that lead some individuals to losing control over their mukbang watching behaviour and becoming addictive mukbang watchers. However, to do so, reliable assessment tools are needed to carry out such research.

There is an ongoing debate in the behavioural addictions field on assessment criteria for addictive behaviours. Some scholars focus on the confirmatory approach while investigating addictive behaviours by applying the components model of addiction (e.g., Andreassen et al., 2012; Griffiths, 2005). Others claim that studies investigating addictive behaviours should focus on exploring the uniqueness of activities rather than aiming at identifying similarities with other addictions (Flayelle et al., 2019). Consequently, it might be better to mix a confirmatory approach while taking idiosyncrasies of behaviours into consideration. To date, and to the best of the authors' knowledge, there is only one psychometric scale that has been

developed and validated to assess AMW which was carried out in the context of this thesis (i.e., Mukbang Addiction Scale [MAS]; Kircaburun et al., 2021b). However, utilising the confirmatory approach, this scale was developed by replacing the word ‘Facebook’ in the Bergen Facebook Addiction Scale (BFAS; Andreassen et al., 2012) with ‘mukbang watching’. Moreover, the psychometric properties of MAS were only tested among a small number of Turkish university students. These limitations create a demand in the literature for newly developed scales to assess AMW by adopting different diagnostic criteria and using larger samples from different age groups and cultures.

Recently, some researchers have attempted to use different diagnostic criteria to assess addictive online behaviours. The Social Media Disorder Scale (SMDS; Van den Eijnden et al., 2016) was developed by adapting the official diagnostic criteria for internet gaming disorder in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5; American Psychiatric Association [APA], 2013) and applying them to social media use. The APA (2013) recommended that endorsing five of the nine criteria (i.e., preoccupation, tolerance, withdrawal, persistence, displacement, problems, deception, escape, conflict) over a one-year period is regarded as having risk for disordered use (Van den Eijnden et al., 2016). More recently, Flayelle et al. (2019) developed the Binge-Watching Engagement and Symptoms Questionnaire (BWESQ) based on the phenomenological study of television series watching in order to assess addictive binge-watching. Their scale comprised seven factors including loss of control, engagement, dependency, desire/savouring, positive emotions, binge-watching, and pleasure preservation (Flayelle et al., 2019).

The present chapter also attempted to develop and validate a psychometric scale to assess mukbang watching motivations. According to the compensatory internet use model (Kardefelt-Winther, 2014), individuals use the internet to satisfy specific psychological, emotional, and physical needs. Therefore, in order to understand a specific online behaviour, underlying

motivational factors should be examined (Kardefelt-Winther, 2014). The watching of mukbang videos can facilitate the (i) development of social connectedness with other viewers and mukbangers, (ii) vicarious satisfaction of eating without going through the negative consequences of consumption of desired high caloric food, (iii) sexual sensations of watching attractive individuals devour food, and (iv) sense of happiness and relief with auditory and visual stimuli (Anjani et al., 2020; Kircaburun et al., 2021a).

Research to date has indicated that virtual compensation of real-life eating, gaining social connectedness, and diminishing the feeling of loneliness by becoming part of a social mukbang community were the main motivations for higher engagement in mukbang watching (Bruno & Chung, 2017; Choe, 2019; Kircaburun et al., 2022b). Furthermore, mukbang watching can also be engaged in for escaping from unpleasant reality, entertainment, relaxation, and obtaining sexual gratification (Donnar, 2017; Kircaburun et al., 2021a; Woo, 2018). However, besides these reports from content analysis and qualitative interviews carried out in different fields, the psychology literature lacks a validated assessment tool to properly assess mukbang watching motivations.

Therefore, the aim of the present study was to develop and validate two scales to assess both AMW and mukbang watching motives. Consequently, construct validity, reliability, and convergent validity for two newly developed scales were examined. These aforementioned properties were examined because they are some of the most important indicators to test and determine psychometric soundness of newly developed scales (Andreassen et al., 2012). More specifically, in terms of construct validity, exploratory and confirmatory factor analyses were used to examine factor structures; reliability tests were applied to investigate internal consistencies. Moreover, the relationships between the Mukbang Addiction Scale (MAS; Kircaburun et al., 2021b), AMW, and mukbang watching motivations were examined in order to determine convergent validity of the newly developed assessment tools, while taking

mukbang watching behaviours into account (i.e., daily mukbang watching duration, daily average number of different mukbang videos watched, the number of mukbangers regularly followed). In terms of good convergent validity, significant positive correlations were expected between the MAS, AMW, mukbang watching motivations, and mukbang watching behaviours.

5.2 Methods

5.2.1 Participants and procedure

An online survey was conducted via *Prolific.co*, a crowdsourcing platform (similar to *Amazon Mechanical Turk*) where participants complete tasks assigned by researchers. Crowdsourced participant recruitment systems have been reported to be reliable and rapid sources for collecting cross-sectional data (Mortensen & Hughes, 2018). Participants were informed about the details of the study and it took approximately 10 minutes to complete the survey.

Participants were asked to indicate whether they were familiar with mukbang at the beginning of the survey. Those who answered ‘no’ to that question were eliminated from the study and were not compensated for their participation ($N = 78$). The final sample comprised 604 participants (51% female; $M_{age}=24.29$ years; $SD=6.25$) whose ages ranged between 18 and 64 years (see Table 1 for participant demographics). The sample was randomly divided into two independent subsamples via using SPSS software (following the steps: Analyze – Select cases – Random sample of cases – Approximately 50% of all cases) in order to conduct both exploratory factor analysis ($N=325$, 54%) and confirmatory factor analysis ($N=279$, 46%). Ethical approval for the study was provided by the research team’s university’s ethics committee and complied with the Helsinki declaration.

Table 5. 1. Participants’ demographic characteristics and mukbang watching behaviour

Variable	N	%
Gender		

	Females	307	50.8
	Males	291	48.2
	Other	6	1.0
Ethnicity			
	Caucasian	263	43.5
	Black/African	167	27.6
	Hispanic/Latino	135	22.4
	Asian	22	3.6
	Mixed	14	2.3
Daily time			
	Rarely watch mukbang	300	49.7
	Between 1-60 minutes	234	38.7
	Between 61-120 minutes	43	7.1
	Between 121-180 minutes	19	3.1
	Between 181-240 minutes	6	1.0
Daily number of videos			
	Rarely watch mukbang	309	51.2
	1-2	221	36.6
	3-5	57	9.4
	6-8	10	1.7
	More than 8	7	1.2
Number of mukbangers followed			
	0	256	42.4
	1-2	231	38.2
	3-5	98	16.2
	6-8	10	1.7
	More than 8	9	1.5

5.2.2 Measures

Demographic variables and mukbang watching: Questions relating to demographic characteristics of participants (i.e., gender, age and ethnicity), as well as the amount of daily time spent watching mukbang, daily number of different mukbang videos watched, and number of different mukbangers regularly followed were asked (see Table 1 for detailed statistics). The number of female participants (N= 307, 50.8%) was slightly higher than the males (N= 291, 48.2%). The majority of the participants were caucasian (43.5%), following them Black/African (27.6%), Hispanic/Latino (22.4%), and Asian (3.6%). 38.7% of the participants spent between 1-60 minutes daily watching mukbang, whereas 7.1% spent between 61-120, and 3.1% between 121-180.

Problematic Mukbang Watching Scale (PMWS): The PMWS was developed for the present study to assess addictive mukbang watching (see Appendix A). The items were generated and formulated by the research team by adapting items from the Binge-watching Engagement and Symptoms Questionnaire (BWESQ; Flayelle et al., 2019) and Social Media Disorder Scale (SMDS; Van den Eijnden et al., 2016). The detailed statistics regarding the scale's psychometric properties are provided in the Results section.

Mukbang Watching Motives Scale (MWMS): The MWMS was developed for the present study to assess motivational factors of mukbang watching (see Appendix B). The items were generated and formulated by the researcher by reviewing the existing evidence found in the literature (e.g., Kircaburun et al., 2021a). The detailed statistics regarding the scale's psychometric properties are provided in the Results section.

Mukbang Addiction Scale (MAS): The six-item MAS (Kircaburun et al., 2021b) was used to assess mukbang addiction (e.g., “How often in the last year have you felt an urge to watch mukbang more and more?”) in order to test the convergent validity of MWMS and PMWS.

The MAS was developed utilising the components model of addiction (Griffiths, 2005), which is a widely accepted and used model in the behavioural addictions field. Items were scored on a 5-point likert scale (1=*very rarely*, 5=*very often*). Higher scores indicate greater risk of mukbang addiction (Cronbach's alpha [α]=.87; omega coefficient [Ω]=.88).

5.2.3 Statistical analysis

All statistical analyses were carried out using SPSS 23 and AMOS 24 software. First, demographic characteristics of participants (i.e., gender, age, ethnicity), and mukbang behaviour (i.e., daily time spent watching mukbang, daily number of different mukbang videos watched, and number of different mukbangers regularly followed) were analysed using frequency and descriptive statistics. Second, EFA and CFA were used to assess the construct validity of MWMS and PMWS. Root mean square residuals (RMSEA), standardised root mean square residuals (SRMR), comparative fit index (CFI), and goodness of fit index (GFI) were checked to determine goodness of fit in CFA. RMSEA and SRMR lower than .05 and CFI and GFI higher than .95 indicate good fit whereas RMSEA and SRMR lower than .08 and CFI and GFI higher than .90 suggest adequate fit to the data (Hu & Bentler, 1999). Third, reliability was tested using Cronbach's alpha and omega coefficient (Hayes & Coutts, 2020). Fourth, Pearson's correlation and hierarchical regression analysis were used to assess convergent validity of MWMS and PMWS.

5.3 Results

5.3.1 Problematic Mukbang Watching Scale (PMWS)

Exploratory factor analysis (N=325): EFA was utilised on the initially generated 18 items in order to determine the factor structure of the PMWS. Item 12 (“*I occasionally fail to accomplish my daily tasks so I can watch mukbang more*”), Item 17 (“*I jeopardised my school or work performance due to watching mukbang*”), and Item 10 (“*I started losing interest and*

spending less time on watching TV series or movies because of my preference for watching mukbang”) were excluded from the scale due to their high loadings on more than one factor. Consequently, the final PMWS comprised 15 items and three factors (i.e., compulsion, denial, loss of control) explaining 67.76% of the total variance.

Confirmatory factor analysis (N=279): In the first order CFA, the three-factor structure had an adequate fit to the data ($\chi^2 = 255.39$, $df = 85$, $p < 0.001$, $RMSEA = 0.08$ CI 90% [0.07, 0.10], $SRMR = 0.05$, $CFI = 0.93$, $GFI = 0.90$). Second order CFA showed that the scale can be used as a single construct ($\chi^2 = 213.35$, $df = 85$, $p < 0.001$, $RMSEA = 0.07$ CI 90% [0.06, 0.09], $SRMR = 0.04$, $CFI = 0.95$, $GFI = 0.91$). Mean scores, standard deviations, communalities produced in EFA, and standardised regression weights produced in CFA are shown in Table 2. The results indicated that the unidimensional PMWS had good construct validity and can be used to assess individuals’ AMW.

Reliability analysis (N=604): The alpha coefficient of the 15-item PMWS was high ($\alpha = .93$). The omega coefficient was also high ($\Omega = .94$). As a result of EFA, CFA, and reliability tests, the PMWS was found to be valid and reliable for assessing individuals’ AMW.

Table 5. 2. Mean scores, standard deviations, communalities, and standardised factor loadings of the PMWS items

	Mean (Standard Deviation) (N = 604)	Exploratory factor analysis (N = 325)	Confirmatory factor analysis (N = 279)
		Communalities	Standardised factor loadings
<i>Loss of control</i>			
Item 6- I feel the need to watch mukbang for longer periods in order to feel satisfied.	1.53 (.91)	.69	.84

Item 8- I occasionally decide not to watch mukbang but eventually begin watching them again.	1.74 (1.02)	.59	.79
Item 5- I often spend more time on watching mukbang than I initially planned.	2.11 (1.22)	.67	.79
Item 7- I sometimes try to reduce the time I spend on watching mukbang but fail.	1.64 (1.01)	.58	.79
Item 11- I sometimes go to bed later than I should because I cannot stop watching mukbang.	1.70 (.97)	.68	.77
Item 2- I look forward to the time I will be able to watch a newly uploaded mukbang video.	1.89 (1.11)	.68	.75
Item 16- I try to forget about real life problems via watching mukbang.	1.75 (1.00)	.68	.71
Item 1- I sometimes think about mukbang videos I previously watched and/or plan the next time I will watch mukbang again.	1.84 (1.06)	.64	.69
Item 15- I sometimes watch mukbang to relieve a negative mood.	2.08 (1.11)	.65	.63
<i>Compulsion</i>			
Item 9: I sometimes prefer watching mukbang rather than meeting friends or participate in hobbies that I used to enjoy before.	1.37 (.80)	.65	.78

Item 3: I am usually depressed or annoyed when I can't watch mukbang, and I feel better when I start watching mukbang.	1.30 (.69)	69	.71
Item 4: I feel bad if I, for different reasons, cannot watch mukbang for a long period of time.	1.32 (.70)	73	.68
Item 18: I risked losing a significant relationship due to watching mukbang.	1.06 (.28)	52	.40
<i>Denial</i>			
Item 13: I tried to hide the time I spent on watching mukbang from my family.	1.40 (.90)	86	.94
Item 14: I do not want my friends or other important people to know how much I watch mukbang.	1.52 (.99)	86	.74

5.3.2 Mukbang Watching Motives Scale (MWMS)

Exploratory factor analysis (N=325): EFA was utilised on the initially generated 32 items in order to determine the factor structure of the MWMS. In the first attempt, three items (i.e., “I watch mukbang to see young attractive men/women”, “I watch mukbang to have an eating companion”, and “I watch mukbang because I love food”) had high loadings on more than one factor. Therefore, these items were removed from further analysis. In the second and third attempts, two more items (i.e., “I watch mukbang to interact with other viewers” and “I watch mukbang to interact with the mukbangers”) were removed for having high loadings on different factors. Consequently, 27 items comprising six factors (i.e., entertainment, sexual reasons, compensation, discovery, groupie reasons [i.e., watching mukbang only because their favourite YouTubers do it], escape), explaining 67.38% of the total variance, were obtained for further analysis.

Table 5. 3. Mean scores, standard deviations, communalities, and standardised factor loadings of the MWMS items

	Mean (Standard Deviation) (N = 604)	Exploratory factor analysis (N = 325) Communalities	Confirmator y factor analysis (N = 279) Standardise d factor loadings
<i>Entertainment</i>			
Item 25: I watch mukbang because I enjoy it.	3.15(1.37)	.78	.89
Item 18: I watch mukbang because it is entertaining.	3.11 (1.30)	.76	.89
Item 11: I watch mukbang to have fun.	2.98 (1.26)	.71	.85
Item 30: I watch mukbang because it relaxes me.	2.52 (1.28)	.69	.77
Item 3: I watch mukbang to escape from boredom.	2.84 (1.24)	.64	.73
Item 32: I watch mukbang when I have nothing better to do.	2.90 (1.22)	.66	.62
Item 4: I watch mukbang for recreation.	2.34 (1.17)	.39	.58
<i>Sexual reasons</i>			
Item 12: I watch mukbang as a sexual fantasy.	1.09 (.44)	.75	.79
Item 19: I watch mukbang because watching someone eat is sexually arousing.	1.11 (.46)	.71	.67
Item 26: I watch mukbang to fantasize that I am feeding someone.	1.14 (.50)	.53	.65

Item 31: I watch mukbang videos of people that I feel sexually attracted to.	1.22 (.63)	.56	.59
<i>Compensation</i>			
Item 8: I watch mukbang to compensate for my hunger.	1.77(1.10)	.77	.85
Item 15: I watch mukbang to satisfy my cravings for different food that I am not allowed to eat.	1.90(1.21)	.68	.78
Item 1: I watch mukbang to have a virtual satisfaction of eating.	2.22(1.15)	.62	.76
Item 28: I watch mukbang to avoid actual eating.	1.41 (.86)	.67	.55
<i>Discovery</i>			
Item 20: I watch mukbang to find out about new food products.	2.63(1.24)	.78	.87
Item 13: I watch mukbang to discover novel foods from different cultures.	2.82(1.27)	.77	.81
Item 6: I watch mukbang to learn about new recipes.	2.46(1.22)	.73	.77
<i>Groupie reasons</i>			
Item 14: I watch mukbang so that I can see and listen to my favorite YouTubers.	2.23(1.26)	.86	.92
Item 7: I watch mukbang only because my favorite YouTubers make them.	2.14(1.24)	.81	.86
Item 27: I watch mukbang so that I can listen to what mukbangers have to tell.	2.36(1.29)	.64	.76
Item 21: I watch mukbang but I am more focused on the mukbanger than the food.	1.99(1.11)	.50	.64
<i>Escape</i>			
Item 17: I watch mukbang to get away from the daily hassles.	1.96(1.07)	.67	.77
Item 10: I watch mukbang to forget about my problems.	1.82(1.03)	.72	.73

Item 24: I watch mukbang to avoid my unpleasant reality.	1.57 (.91)	.72	.70
Item 23: I watch mukbang to be part of an online social community.	1.57 (.89)	.54	.60
Item 2: I watch mukbang to feel less lonely.	1.76(1.02)	.54	.58

Confirmatory factor analysis (N=279): In CFA, the six-factor solution produced an adequate fit to the data ($\chi^2 = 653.59$, $df = 309$, $p < .001$, $RMSEA = 0.06$ CI 90% [0.06, 0.07], $SRMR = 0.06$, $CFI = 0.92$, $GFI = 0.85$). Standardised factor loadings ranged between .58 and .92, and indicated all items had a significant role in the scale. Mean scores, standard deviations, communalities produced in EFA, and standardised regression weights produced in CFA are shown in Table 3. The results indicated that the MWMS had good construct validity and can be used to determine individuals' motivations for watching mukbang.

Reliability analysis (N=604): The alpha coefficients of mukbang watching motivations including entertainment (seven items; $\alpha = .91$), sexual reasons (four items; $\alpha = .76$), compensation (four items; $\alpha = .82$) discovery (three items; $\alpha = .86$), groupie reasons (four items; $\alpha = .85$), and escape (five items; $\alpha = .82$) were high. The omega coefficients of mukbang watching motivations including entertainment (seven items; $\Omega = .91$), sexual reasons (four items; $\Omega = .77$), compensation (four items; $\Omega = .83$) discovery (three items; $\Omega = .86$), groupie reasons (four items; $\Omega = .86$), and escape (five items; $\Omega = .82$) were high. As a result of EFA, CFA, and reliability tests, 27-item MWMS was found to be valid and reliable for assessing individuals' mukbang watching motivations.

5.3.3 Convergent validity

Convergent validity of the PMWS and MWMS was assessed by testing their correlations with MAS and demographic variables (see Table 4). There were moderate and strong correlations

among all subscales of PMWS and MWMS and the total mean score of PMWS with MAS. More specifically, global PMWS score was strongly correlated with the MAS ($r = .85; p < .001$), and loss of control ($r = .97; p < .001$) and compulsion ($r = .81; p < .001$) subfactors of PMWS, and moderately with all mukbang watching motivations assessed with MWMS including entertainment ($r = .64; p < .001$), sexual reasons ($r = .35; p < .001$), compensation ($r = .60; p < .001$), discovery ($r = .44; p < .001$), groupie reasons ($r = .43; p < .001$), escape ($r = .75; p < .001$), PMWS denial subfactor ($r = .68; p < .001$), daily time spent watching mukbang ($r = .56; p < .001$), daily number of mukbang videos watched ($r = .56; p < .001$), and number of mukbangers regularly followed ($r = .56; p < .001$). Being male was negatively weakly correlated with PMWS ($r = -.20; p < .001$) whereas age was not ($r = .03; p = .60$).

Furthermore, hierarchical regression analysis was also used to test convergent validity of the newly developed scales by including variables into a model that were significantly correlated with each other in the correlation analysis (see Table 5). In the first block, demographic variables were included into the model while mukbang watching motivations regressed in the second block. Daily time spent watching mukbang ($\beta = .10; p < .01$), daily number of different mukbang videos watched ($\beta = .12; p < .01$), and number of mukbangers followed ($\beta = .09; p < .01$) were weakly positively associated with AMW assessed with PMWS. Moreover, while adjusting for the demographics, watching mukbang with motivations of escape (moderately [$\beta = .45; p < .001$]), real life eating compensation (weakly [$\beta = .16; p < .001$]), and sexual reasons (weakly [$\beta = .13; p < .001$]) were positively related to AMW. Entertainment ($\beta = .10; p = .07$), discovery ($\beta = .10; p = .15$), and groupie reason motives ($\beta = .10; p = .24$) of mukbang watching and being male ($\beta = .10; p = .52$) were not significantly associated with AMW.

Table 5. 4. Mean scores, standard deviations, and Pearson's correlations of the study variables (N=604)

	1	2	3	4	5	6	7	8	9	10	11
1. MAS	-										
2. PMWS-Total	.85**	-									
3. PMWS-Denial	.54**	.68**	-								
4. PMWS-Compulsion	.75**	.81**	.52**	-							
5. PMWS-Loss of control	.82**	.97**	.54**	.70**	-						
6. MWMS-Entertain	.48**	.64**	.31**	.37**	.69**	-					
7. MWMS-Sexual	.33**	.35**	.30**	.35**	.31**	.17**	-				
8. MWMS-Compensat	.48**	.60**	.38**	.44**	.60**	.53**	.21**	-			
9. MWMS-Discovery	.33**	.44**	.19**	.31**	.47**	.58**	.11*	.38**	-		
10. MWMS-Groupie	.37**	.43**	.22**	.31**	.44**	.56**	.14*	.24**	.34**	-	
11. MWMS-Escape	.66**	.75**	.47**	.57**	.74**	.64**	.28**	.54**	.38**	.50**	-
12. Age	-.05	-.03	.00	-.02	-.03	-.01	-.07	.02	-.02	-.09	-.00
13. Being male	-.17**	-.20**	-.03	-.14*	-.22**	-.24**	.08	-.24**	-.19**	-.25**	-.23**
14. Daily time spent	.49**	.56**	.28**	.40**	.59**	.53**	.14*	.41**	.41**	.43**	.47**
15. Daily number	.47**	.56**	.26**	.37**	.60**	.58**	.14**	.41**	.42**	.39**	.42**
16. Mukbangers followed	.48**	.56**	.25**	.38**	.59**	.59**	.16**	.40**	.44**	.49**	.45**
<i>Mean</i>	1.42	1.62	1.46	1.26	1.81	2.83	1.14	1.83	2.64	2.18	1.73
<i>Standard deviation</i>	.63	.67	.88	.49	.83	1.01	.39	.87	1.10	1.02	.75

Note. MAS=Mukbang Addiction Scale; PMWS=Problematic Mukbang Watching Scale; MWMS=Mukbang Watching Motives Scale.

* $p < .01$, ** $p < .001$

Table 5. 5. Hierarchical regression analysis predicting addictive mukbang watching (N = 604)

Model	B	SE	β	<i>t</i>	ΔR^2
Block 1 ($R^2_{\text{Adjusted}} = .41$; $F_{(4,599)} = 103.79$; $p < .001$)					.41
Being male	.02	.03	.02	.62	
Daily time spent	.07	.03	.10	2.81*	
Daily number of videos watched	.10	.03	.12	3.31*	
Mukbangers followed	.07	.03	.09	2.75*	
Block 2 ($R^2_{\text{Adjusted}} = .69$; $F_{(10,593)} = 132.26$; $p < .001$)					.28
MWMS-Entertainment	.04	.03	.07	1.68	
MWMS-Sexual	.23	.04	.13	5.42**	
MWMS-Compensation	.12	.02	.16	5.43**	
MWMS-Discovery	.03	.02	.04	1.45	
MWMS-Groupie	-.02	.02	-.04	-1.16	
MWMS-Escape	.40	.03	.45	13.35**	

Note. B = unstandardized regression coefficient; SE = Standard error; β = standardised regression coefficient; MWMS = Mukbang Watching Motives Scale; * $p < .01$, ** $p < .001$

5.4 Discussion

The purpose of the present study was to contribute to the extant knowledge on the psychology of mukbang watching by developing and validating two new scales – Problematic Mukbang Watching Scale (PMWS) and the Mukbang Watching Motivation Scale MWMS – using construct validity and convergent validity. After reviewing the existing empirical evidence concerning addictive online behaviours and motives of mukbang watching, the present study examined the construct validity of the PMWS and MWMS by applying EFA and CFA using two independent sub-samples. Furthermore, convergent validity was also investigated by testing correlations between AMW, the MAS, dimensions of the MWMS, and mukbang watching behaviours. The results indicated that the PMWS and MWMS were valid and reliable instruments for assessing individuals' AMW and mukbang watching motivations respectively.

CFA indicated AMW symptoms included denial, compulsion, and loss of control related to mukbang watchers' engagement in mukbang watching behaviour. However, second order CFA showed the PMWS could be used as a unidimensional construct to assess global AMW by presenting good fit and solid construct validity. It appears addictive users of mukbang watching experienced problems in controlling their mukbang watching behaviour due to the increased compulsive urges that lead them to excessive engagement. Two items represented the denial component which indicated those with greater AMW tried to hide their mukbang watching from their friends, families, and/or loved ones. Consequently, the PMWS shared common constructs and symptoms with the (i) MAS which used the components model of addiction to develop its scale items (Griffiths, 2005), (ii) SMDS which was developed by adapting the official diagnostic criteria of gaming disorder (Van den Eijnden et al., 2016), and (iii) BWESQ which comprised symptoms including engagement, positive emotions, desire/savouring, pleasure preservation, binge-watching, dependency, and loss of control (Flayelle et al., 2019). However, it should be noted that the mean scores of items were relatively at average and low

levels. Also, the lack of components associated with having real life problems due to AMW may indicate that the present sample's AMW may not be indicative of addiction *per se* (Griffiths, 2005), but more of a problematic and risky use that may become an addiction in the future.

Construct validity analyses indicated a six-factor model for the MWMS with robust psychometric results and fit scores. CFA confirmed the MWMS comprised six motives including compensation (e.g., real life eating and satiation), entertainment, sexual reasons, escape (e.g., from mental and real life problems), discovery (e.g., different foods and recipes), and groupie reasons (e.g., watching and listening to their favourite *YouTubers*). Only the social motive was eliminated from the initial theorised group of mukbang watching motivations after analyses. However, it should be noted that this elimination was only because of the analytic results (i.e., social motives loading on more than one factor), and that social motives remain important. The extant literature suggested that one of the most important motivations for watching mukbang was to interact with mukbangers and other viewers in order to feel less lonely, to have an eating companion, and to feel part of an online social community (Kircaburun et al., 2021a). However, this may be because items relating to watching mukbang to feel less lonely and part of an online social community were included into the escape motive after construct validity analyses. It appears that participants used mukbang watching as an avoidance activity that helps them ignore unpleasant psychosocial feelings (e.g., loneliness) rather than a recreational social activity that enables social interaction.

Convergent validity was tested for the newly developed assessment instruments by examining the correlational relationships between variables. In line with study expectations and the notion that the usage behaviours of specific online activities are highly consistent predictors of addictive use of those activities (Griffiths et al., 2014), mukbang watching behaviours were positively related to AMW in both correlation analysis and the regression model. Moreover,

all mukbang watching behaviours were positively associated with mukbang watching motives ranging from weak to moderate. Consequently, AMW was positively related to mukbang watching motives of escape, compensation, and sexual reasons, while controlling for mukbang watching behaviours including daily mukbang watching duration, daily number of different mukbang videos watched, and the number of mukbangers regularly followed.

Escape motive being the strongest predictor of AMW was in line with previous studies in behavioural addictions literature reporting that individuals' motivation for escaping their reality and negative mental state was an important indicator of their elevated engagement in other online addictive behaviours including internet gaming disorder (Marino et al., 2020), internet addiction (Yang et al., 2021), and addictive binge-watching (Starosta et al., 2020). Watching mukbang with the motivation of compensating real life eating was the second strongest predictor of AMW after escape. This was consistent with the notion that the important part of AMW is the extension of real life eating and food consumption problems (e.g., food addiction, eating disorders) into online platforms (Kircaburun et al., 2022b). It may be that those who successfully replace their real life eating with virtual eating by obtaining the vicarious satiation from watching mukbang (e.g., those with anorexia and/or binge-eating disorder) become uncontrolled, excessive, and compulsive mukbang watchers. Finally, the unexpected finding of sexual motives being a significant predictor of AMW may be explained by the fact that mukbangers who are young and sexually attractive have the highest numbers of regular followers and viewers (Kircaburun et al., 2021a). Some viewers (typically male) successfully obtain sexual pleasure from watching attractive young individuals (typically female) devour food in front of them appear to become addictive mukbang watchers (Kircaburun et al., 2021a). Given that there are a very high number of sexual sensations and online sexual stimuli are potentially addictive (Hermand et al., 2020), some viewers may have

perceived them as mukbang sexual videos rather than watching them for fulfilling their eating and social needs.

5.5 Limitations

Several limitations to the present study should be emphasised while interpreting the present study's results. First, Caucasian, Hispanic/Latino, and Black/African participants comprised the large majority of the present sample. Existing cross-cultural studies suggest that mukbang watching attitudes and motives may vary across cultures (Pereira et al., 2019). Future studies should try to recruit more equally distributed samples from different ethnicities around the world so that the findings can be replicated with more representative study groups. Existing cross-cultural studies suggest that mukbang watching attitudes and motives may vary across cultures (Pereira et al., 2019). Second, the cross-sectional survey used in the present study prevents examination of the directions of the relationships reported here. Future studies should adopt more in-depth methods to investigate AMW and mukbang watching motives by using longitudinal designs to investigate any causal associations. Third, self-report online surveys used in the present study are prone to having specific biases including memory recall, random responses, and social desirability. Future studies should use more in-depth data collection techniques including qualitative interviews.

5.6 Conclusion

Despite the aforementioned limitations, the present study contributes to the existing online behavioural addictions literature by developing and validating two new psychometric assessment instruments that are valid and reliable for assessing AMW and mukbang watching motives among adult mukbang watchers. Furthermore, the present study also makes an important contribution in understanding the underlying motivational factors associated with elevated AMW. The psychometric properties of the newly developed scales in the present study

and the aforementioned associations between the study constructs should be tested by translating these scales into different languages and cultures before developing any intervention strategies for AMW.

CHAPTER 6: Compensatory usage of the internet: The case of mukbang watching on YouTube

6.1 Introduction

The preceding chapters have covered various drivers and outcomes of mukbang viewing, as well as the motivational factors that can amplify the problem of addictive mukbang watching (AMW). This segment aims to delve deeper into AMW, specifically in the context of YouTube, where a large number of mukbang videos are uploaded and consumed. It also examines the psychological and social factors including depression and loneliness, which are commonly linked to diverse technology-related addictive behaviours, as defined in the I-PACE model (Brand et al., 2016, 2019).

YouTube allows its users to create, share, view, like, dislike, and comment on content that concerns various topics including movies, video clips, video games, sports, food shows, and other different subjects that interest and entertain individuals. Currently, an average of five billion YouTube videos are watched per day and YouTube has become one of the most popular social media platforms (Aslam, 2018). YouTube is now as big as Facebook with over 1.8 billion monthly logged-in users (Gilbert, 2018). Although YouTube is a neutral activity, a small minority of its users might engage in excessive and/or uncontrolled use and be adversely affected by it.

Despite its growing popularity, possible addictive use of YouTube (e.g., associated with addictive-like symptoms and negative consequences) has not received much attention among researchers, although a small number of pilot studies showed YouTube to bear the potential to become uncontrolled and addictive for a subgroup of users (Balakrishnan & Griffiths, 2017; de Bérail et al., 2019; Klobas et al., 2018, 2019). From the biopsychosocial perspective,

addictive YouTube use (AYU) could be characterised by being preoccupied with YouTube, having a strong motivation to use YouTube, and spending excessive time on YouTube leading to impairments in social, personal and/or professional life, as well as psychological health and wellbeing (Andreassen & Pallesen, 2014). The aforementioned studies having explored the correlates of AYU mainly focused on personality traits, motivations, gratifications, and content inclinations (Balakrishnan & Griffiths, 2017; de Bérail et al., 2019; Klobas et al., 2018, 2019). These studies associated AYU with entertainment motives, specific content inclinations (e.g., algorithm-generated content chaining), social anxiety, and social gratifications.

According to the compensatory internet use model, vulnerable individuals are susceptible to using the internet in order to compensate for unattained needs via specific online activities, such as playing video games or interacting on social network sites (Kardefelt-Winther, 2014). With facilitation provided by the internet and its accessibility, various types of addictive online behaviours emerged, and the misuse of information and communication technologies (ICTs) is now considered a worldwide public health issue by the World Health Organization (WHO, 2015). For instance, the addictive and uncontrolled use of video gaming, pornography, online gambling, and social networking sites have been described as specific maladaptive coping strategies engaged in to deal with unpleasant feelings and/or to compensate real-life unmet needs (Sindermann et al., 2018). Empirical studies have consistently highlighted associations between depression and loneliness and the addictive (e.g., excessive) involvement in various types of online activities such as social networking (e.g., Facebook), pornography use, and binge-watching television series (Atroszko et al., 2018; Blachnio et al., 2015; Boudali et al., 2017; Flayelle et al., 2019; Li et al., 2018; Philaretou et al., 2005).

To date, there is little empirically known regarding the potentially problematic consequences of a specific YouTube-related activity that has gained popularity in the past few years (i.e., “mukbang” watching). It is not surprising that those who love food and/or addicted to food

may use online platforms for food-related content. For instance, those who loved food but did not want to suffer the negative consequences of excessive eating preferred satisfying their needs via watching mukbang, which enabled them to experience vicarious eating and satiation (Kircaburun et al., 2021a). Those who had different eating disorders (e.g., anorexia nervosa, binge eating) watched mukbang to overcome their problems for eating and food consumption, while some hospital patients who could not reach to desired food (e.g., unhealthy fast food) fulfilled their eating urges via watching mukbang (Kircaburun et al., 2020). Consequently, successful attempts to compensate for different offline eating needs via watching mukbang in social media platforms is likely to lead to repeated use of these activities, and to AMW.

Watching mukbang can fulfil social gratifications for some of its users with its facilitation of communicating with the mukbangers and other viewers (Hong & Park, 2018), and it is well established that compensating social needs via using specific online applications is associated with addictive use (Balakrishnan & Griffiths, 2017; Zanetta-Dauriat et al., 2011). In fact, mukbang has been suggested as representing a new form of social eating (McCarthy, 2017). Moreover, it can be argued that watching mukbang can fulfil social gratifications via the connection and affective bonding with mukbangers or other individuals watching mukbang. From such a perspective, attachment towards watching mukbang could be even stronger for viewers following and interacting with mukbangers who reinforce them at the interpersonal and affective level (Wijayanti, 2018). Indeed, it has been suggested that one of the main reasons for the appeal of this activity is related to the communication between broadcasters and their audiences (Recktenwald, 2017). Consequently, AMW could constitute another maladaptive coping strategy used to fulfil unmet offline social needs and deal with negative feelings (e.g., loneliness, depression).

Although, viewers can watch mukbang using different online platforms (e.g., several social media sites, online broadcasting channels), mukbang watching is largely facilitated by

YouTube in which viewers can interact with videos and live streams using comments and the like/dislike options. Past research has suggested that such structural interactive features (such as liking and/or commenting on others' posts, watching live streams) provided by YouTube increases its addictive potential, thus promoting problematic use (Griffiths, 2018; Kircaburun & Griffiths, 2019). Given that YouTube is one of the most popular and unique platforms allowing for video content creation and viewing (Balakrishnan & Griffiths, 2017; Gilbert, 2018), it constitutes the ideal social networking site when it comes to conducting research on the mukbang phenomenon. Consequently, it was expected that individuals would widely use YouTube to watch mukbang and that AMW would be positively related to AYU.

Theoretically anchored within the compensatory usage of the internet theory (Kardefelt-Winther, 2014), the present study tested whether AMW mediates the relationship between known psychosocial risk factors of addictive online behaviours (depression, loneliness) and AYU among a sample of mukbang viewers. While constructing the research model, the temporal precedence of the variables according to the theoretical rationale was taken into account (Kline, 2015). Depression and loneliness were included as the distal predictors postulated to promote compensatory usage of YouTube. Furthermore, it was postulated that depression and loneliness would predict AMW and AYU, and that AMW would mediate the relationship between these psychosocial risk factors and AYU, YouTube being the most popular platform for broadcasting and viewing mukbang. It was hypothesised that those who are depressed and lonely could engage in excessive mukbang watching via using YouTube in order to alleviate negative feelings. Moreover, because gender is known to influence the type of online activities favoured (e.g., males prefer online gaming and females prefer social network sites; see Andreassen et al., 2016; Sindermann et al., 2018), this variable was taken into account in the present study (i.e., models were computed for the whole sample and for males and females separately).

6.2 Methods

6.2.1 Participants and procedure

Participants were Turkish mukbang viewers who completed an online survey. The survey was promoted on different online courses of a distance learning centre at a private university. Students had to acknowledge that participation in the study was completely voluntary and would not affect their grades nor would they get compensation for participation. It was also emphasised that information regarding participants' identity would be completely confidential (e.g., no internet protocol [IP] addresses were recorded) and collected data would only be used for scientific purposes. A total of 1204 students began the survey and 604 completed it. To be included in the study, participants had to be mukbang viewers (watched mukbang videos at least once in their lifetime) and to have completed all survey items. Of these, 217 were mukbang watchers (watched mukbang at least once before) whose ages ranged between 18 and 33 years ($M_{age} = 20.58$ years, $SD_{age} = 1.88$; 63% female). Those who indicated that they have never watched a mukbang before were excluded from the study ($N = 387$).

Participants first answered a demographic questionnaire that included items regarding their gender, age, YouTube use (frequency), and mukbang watching (frequency). Next, participants completed items assessing addictive YouTube use (this scale was adapted from the Bergen Facebook Addiction Scale; Andreassen et al., 2012), AMW (Mukbang Addiction Scale; Kircaburun et al., 2020b), depression (Short Happiness-Depression Scale; Joseph et al., 2004), and loneliness (UCLA- Loneliness Scale-Short Form; Hays & DiMatteo, 1987). Informed consent was taken from the participants and participation in the study was voluntary and anonymous. Ethical approval for the study was received from the university's ethics committee, and complied with the Declaration of Helsinki.

6.2.2 Measures

Problematic YouTube Use Scale (PYUS): The PYUS was the modified version of the Bergen Facebook Addiction Scale (BFAS; Andreassen et al., 2012) designed to assess addictive use of YouTube based on the addiction components proposed by Griffiths (2005). This scale was developed after the BFAS by replacing for each item the word “Facebook” with “YouTube”. It comprises six items (e.g., “*How often in the past year have you used YouTube so much that it has had a negative impact on your job/studies?*”) assessing six features associated with addictive behaviours (i.e., salience, conflict, withdrawal, mood modification, tolerance, and relapse) scored on a 5-point Likert scale from “*very rarely*” to “*very often*”. Structural validity of this adapted version of the BFAS was established in the present study by relying on confirmatory factor analyses (CFAs). Goodness of fit indices with the PYUS indicated good fit to the data ($\chi^2/df = 1.26$, RMSEA = .04 [CI 90% (.00, .10)], GFI = .99, CFI = 1.00) after modification covariances were used between Item 1 and Item 2, and Item 2 and Item 3 as suggested (Byrne, 2016). The reliability coefficient of the original scale and Turkish adaptation of the BFAS were high (.83 and .83 respectively) (Andreassen et al., 2012; Yurdagül et al., 2019). The composite reliability (Colwell, 2016) score (CRS) alpha was very good in the present sample ($\alpha = .86$).

Mukbang Addiction Scale (MAS); Kircaburun et al., 2020b): The unidimensional MAS comprises six items (e.g., “*How often in the past year have you spent a lot of time thinking about mukbang or planned watching mukbang?*”) and assesses AMW on a 5-point Likert scale from “*very rarely*” to “*very often*”. The reliability coefficient of the MAS was .95 in the original study (Kircaburun et al., 2020b). The CRS coefficient was high in the present study ($\alpha = .92$).

Short Depression-Happiness Scale (SDHS); Joseph et al., 2004): The original form of the SDHS comprises six items on a 4-point Likert scale from “*never*” to “*often*” and assesses subjective states of depression and happiness (Joseph et al., 2004). However, the Turkish validation study

suggested good psychometric properties for a two-dimension structure with three items assessing depression (e.g., “*I felt that life was meaningless*”) and three items assessing happiness (Kircaburun et al., 2019). The present study only used the three depression items. The reliability coefficient of the original SDHS and Turkish adaptation were .92 and .75 respectively (Joseph et al., 2004; Kircaburun et al., 2019). The CRS coefficient was very good in the present study ($\alpha = .86$).

UCLA- Loneliness Scale-Short Form (ULS-4; Hays & DiMatteo, 1987): The unidimensional ULS-4 comprises four items (e.g., “*People are around me but not with me*”) and assesses perceived feeling of loneliness on a 4-point Likert scale from “*never*” to “*often*”. The reliability coefficient of the original ULS-4 and Turkish adaptation were .75 and .58 respectively (Eskin, 2001; Hays & DiMatteo, 1987). The CRS coefficient was good in the present study ($\alpha = .74$).

6.2.3 Statistical analysis

All statistical analyses were carried out using SPSS 23 and AMOS 23. First, CFA was used to validate the factor structure of the PYUS. In order to determine goodness of fit of CFA, root mean square residuals (RMSEA), standardised root mean square residuals (SRMR), comparative fit index (CFI), and goodness of fit index (GFI) were checked. According to Hu and Bentler (1999), RMSEA and SRMR lower than .05 is good and RMSEA and SRMR lower than .08 is adequate; CFI and GFI higher than .95 is good and CFI and GFI higher than .90 is acceptable. Frequency and descriptive statistics were computed with regard to gender, age, YouTube use, and mukbang watching. Following this, Pearson’s correlation and *t*-tests were applied to examine the correlation coefficients between AYU, AMW, depression, and loneliness, and significance of the score differences between genders. Finally, path analysis was conducted in order to examine the possible mediating role of study variables using a saturated model (Byrne, 2016). More specifically, depression and loneliness were included as independent variables; AMW as the mediator, and AYU as the outcome variable into the

model. Path analysis was carried out using maximum likelihood discrepancy with 5000 bootstrapped samples and 95% bias-corrected confidence intervals.

Table 6. 1. Mean scores, standard deviations, and standardised regression weights of the items on the Problematic YouTube Use Scale

How often during the last year have you ...	Mean scores (S.D.)	Standardised regression weights
Spent a lot of time thinking about YouTube or planned use of YouTube?	2.41 (1.21)	.60
Felt an urge to use YouTube more and more?	2.34 (1.25)	.72
Used YouTube in order to forget about personal problems?	2.52 (1.35)	.59
Tried to cut down on the use of YouTube without success?	1.89 (1.16)	.85
Become restless or troubled if you have been prohibited from using YouTube?	1.86 (1.17)	.90
Used YouTube so much that it has had a negative impact on your job/studies?	1.95 (1.19)	.87

6.3 Results

6.3.1 Descriptive statistics

Mean scores, standard deviations, and standardised regression weights of PYUS items are presented in Table 1. Mean scores and standard deviations of the main study variables are provided in Table 2. With regard to YouTube use, 36% of the participants indicated using it less than one hour daily, 29% between one and two hours, 17% between two and three hours, 9% between three and four hours, and 10% more than four hours. With regard to mukbang watching, 91% of the participants indicated watching them less than one hour daily, 4% between one and two hours, 2% between two and three hours, 1% between three and four hours, and 2% more than four hours. On average, two-thirds of the participants used YouTube more

than one hour a day, whereas only 9% indicated watching mukbang more than one hour everyday.

6.3.2 Correlation analyses and independent samples *t*-tests

Pearson’s correlation test (Table 2) showed that AYU was moderately correlated with AMW ($r = .48, p < .001$), frequency of YouTube use ($r = .37, p < .001$), and depression ($r = .31, p < .001$), and weakly correlated with frequency of mukbang watching ($r = .22, p < .001$). Loneliness was not correlated with AYU. AMW was moderately correlated with frequency of mukbang watching ($r = .44, p < .001$) and weakly with loneliness ($r = .22, p < .01$). Depression and frequency of Youtube use were not correlated with AMW.

Table 6. 2. Pearson’s correlation coefficients, and descriptives of the study variables

	1	2	3	4	5	6
1. AYU	-					
2. AMW	.48***	-				
3. Depression	.31***	.11	-			
4. Loneliness	.13	.22**	.29***	-		
5. YouTube use	.37***	.08	-.02	-.15*	-	
6. Mukbang watching	.22**	.44***	.03	.15*	.27***	-
<i>Mean</i>	2.16	1.47	2.24	2.05	2.23	.71
<i>S.D.</i>	1.00	.82	1.03	.66	1.35	.97
<i>Range</i>	1-5	1-5	1-4	1-4	0-5	0-5

Note. AYU = Addictive YouTube use as assessed by PYUS; AMW = Addictive mukbang watching as assessed by MAS; YouTube use = Frequency of daily time spent using YouTube; Mukbang watching = Frequency of daily time spent watching mukbang; * $p < .05$, ** $p < .01$, *** $p < .001$

In order to examine the significance of the score differences between genders, independent samples *t*-tests were utilized (Table 3). Males were found to have a higher level of AYU ($t[217]$

= -2.09, $p = .04$, $df = 215$) and AMW ($t[217] = -3.39$, $p = .001$, $df = 215$). There were no gender differences for depression ($t[217] = 1.46$, $p = .15$, $df = 215$) and loneliness ($t[217] = .68$, $p = .50$, $df = 215$).

Table 6. 3. Comparison of the scores of study variables (t -test) between females and males

	Females (N=136)	Males (N=81)	t -test	Cohen's d
Addictive YouTube use	2.05 (.99)	2.34 (1.00)	-2.09*	.29
Addictive mukbang watching	1.33 (.67)	1.71 (.98)	3.39**	.45
Depression	2.31 (1.08)	2.10 (.94)	1.46	.21
Loneliness	2.07 (.64)	2.01 (.70)	.68	.09

Note: Mean (SD). * $p < .05$, ** $p < .01$

6.3.3 Mediation analysis

A saturated model, in which all fit indices had perfect values and there were no modification indices, was used to evaluate hypothesised model (Figure 1). This was expected given the present study used path analysis but not structural equation modelling. Mediation analyses (Figure 1) showed that AMW was associated with both loneliness and AYU. However, this indirect effect of loneliness on AYU via AMW did not lead to a significant total effect. Loneliness was not related to AYU.

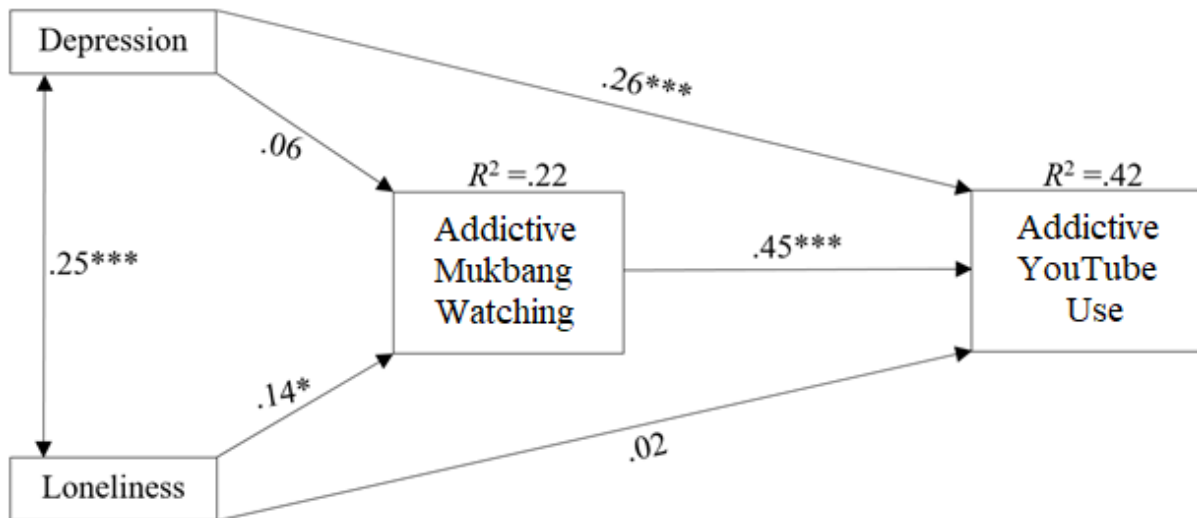


Figure 6. 1. Results of path analyses with mediation model among total sample, males, and females

Note. For clarity purposes control variables (frequency of YouTube use and frequency of mukbang watching) were not depicted in the figure. In the model, frequency of YouTube use and mukbang watching were adjusted for AMW and AYU. Frequency of YouTube use was positively related to AYU ($\beta = .37; p < .001$), while frequency of mukbang watching was positively related to AMW ($\beta = .42; p < .001$). * $p < .05$, ** $p < .01$, *** $p < .001$.

On the other hand, depression was directly associated with AYU ($\beta = .26, p < .001$ CI 95% [.15, .38]). Depression was not associated with AMW in the path analysis (Table 4). Therefore, AMW did not mediate the relationship between depression and AYU. Despite the significant score differences on AMW and AYU scores between females and males, there were no significant gender differences in direct and indirect associations in the path analysis (not depicted as table or figure), indicating that the paths among the variables were invariant across both sexes.

Table 6. 4. Standardised total, direct, and indirect effects of predictor variables on the outcome variable

	β	Standard Error
Depression → AYU (total effect)	.29***	.06
→ AYU (direct effect)	.26***	.06
→ AMW → AYU (indirect effect)	.03	.03
Loneliness → AYU (total effect)	.09	.06
→ AYU (direct effect)	.02	.05
→ AMW → AYU (indirect effect)	.06*	.03

Note. AYU = Addictive YouTube use; AMW = Addictive mukbang watching; * $p < .05$, ** $p < .01$, *** $p < .001$.

6.4 Discussion

The present study tested whether addictive mukbang watching (AMW) can be conceptualised – similar to other potentially addictive online activities (e.g., online gaming, cybersex) – as a maladaptive coping strategy. To the authors’ knowledge, the present study is the first empirical investigation of AMW. It was found that depression and AMW were positively related to AYU. Loneliness was positively associated with AMW.

The study’s findings suggest that mukbang watching might constitute a dysfunctional coping mechanism for some individuals, especially in individuals displaying high loneliness. The present study failed to identify AMW as a significant mediator between depression and AYU. AMW was moderately and positively associated with AYU, but not with depression. In contrast, AMW was positively and directly linked to loneliness. In fact, the direct relationship between loneliness and AMW found in the present study suggests that AMW is more likely to be engaged in to fulfil unattained social needs (and thus to cope with loneliness) than to

compensate for a depressive mood *per se*. Mukbang enthusiasts can thus improve their feelings of social connectedness via watching mukbang and interacting with the content creators and viewers via a common interest, which is susceptible to alleviate their perceived feeling of loneliness. Finally, the positive relationship observed between AMW and AYU was expected. This is because YouTube is one of the most popular social media platforms that allows its users to create or view live streams and videos and to simultaneously interact with content creators and other viewers via comments, facilitating and attracting mukbang creators and viewers to meet and interact with each other.

Depression was positively associated with AYU. This finding is consistent with the literature reporting that elevated depression is related to higher addictive use of technological platforms (Blachnio et al., 2015; Kircaburun et al., 2019; Kircaburun et al., 2019). For example, past research has shown that depressed individuals are more prone to boredom and tend to use smartphones as a form of maladaptive coping (Elhai et al., 2018a). Similarly, it has also been shown that depressed individuals engage in addictive technology use to avoid or mitigate ruminative thoughts (Elhai et al., 2018b). Other research suggests that the relationship between depression and addictive use of technology is mediated by specific psychological factors such as distress tolerance and mindful traits (Elhai et al., 2018c). Further research should therefore consider the potential psychological factors that could account for the relationships observed in the present study (e.g., ruminations, mindfulness, emotion dysregulation).

Unexpectedly, loneliness was not associated with AYU in the present study. This finding conflicts with extant research demonstrating an association between loneliness and addictive use of technological platforms (Atroszko et al., 2018; Kim, 2018; Özdemir et al., 2014), suggesting that solitary individuals preferentially use online platforms to obtain social gratifications via interpersonal exchanges (Ryan et al., 2014). However, the present study was conducted among a very specific sample of Youtube users (i.e., those watching mukbangs).

Therefore, it is perhaps unsurprising that for these individuals, loneliness is specifically related to mukbang watching, and not to Youtube use more generally. Such results support the need to delineate the broad (and potentially deceptive) concepts such as ‘YouTube Addiction’. Indeed, YouTube can be used for very heterogeneous purposes (e.g., broadcasting video games, watching specific YouTube channels, streaming live events), and the consequences and risk factors associated with these different uses probably diverge, even if further studies are necessary to ascertain this claim.

It is also worth speculating on the factors that might explain the relationships observed in the present study. Although not directly assessed in the study, it is possible that specific motives related to social bonds or sexual fantasy promote excessive involvement in watching mukbang. Alternatively, it is also possible that mukbang watching is more prevalent among individuals presenting with eating disorder symptoms. For instance, individuals with bulimia and/or binge-eating disorders might engage in mukbang watching in order to perceive binge-eating massive meals as a normal or even healthy behaviour (Kim, 2017). Furthermore, it cannot be excluded that for some individuals, excessive mukbang watching may constitute a potential addictive-like behaviour. Indeed, addictive food intake is increasingly viewed as an addictive disorder (Love et al., 2015), and mukbang viewing, similar to binge-eating episodes, may promote feelings of satisfaction and pleasure. However, studies limited to a symptom-based approach, such as the present one, are claimed by some to be insufficient to support the view that mukbang watching can be conceptualised as an addictive disorder (Billieux et al., 2015; Starcevic et al., 2018).

6.5 Limitations

Some limitations of the study also need to be acknowledged. First, the study comprised a sample of self-selected Turkish university students, which limits the generalisation of the findings. The study should therefore be replicated in samples from different countries and

cultures. Second, the study was cross-sectional and based on self-reports, therefore the responses are susceptible to well-known biases (e.g., some participants might lack introspection or provide socially desirable answers) and nothing can be said regarding causality between the variables investigated. Thirdly, the sample was imbalanced in terms of gender, and further studies should be conducted to analyse gender effect in mukbang watching and its misuse.

Fourth, despite the fact that the daily time spent using YouTube and watching mukbang were adjusted for in the model, there might be other potential confounding factors (e.g., eating disorders, demographic factors) that should be controlled for. Therefore, future studies should take other factors into account when investigating the relationships that were examined in the present study. Fifthly, although all participants have watched mukbang before, most of them were involved in mukbang watching to a mild extent. Future studies should recruit participants that engage in this behaviour more regularly and frequently. Finally, the study was limited to a symptom-based approach and additional measures assessing potential underlying psychological dimensions (e.g., ruminative thinking, motives for using YouTube and watching mukbang) is required to better understand the processes involved (Billieux et al., 2015). Along the same lines, further research should develop a scale that assesses the unique nature of mukbang watching (e.g., by relying on mixed qualitative and quantitative designs), rather than applying a confirmatory approach which consists in using criteria from other addictive disorders and applying them to emerging addictive behaviours (see Flayelle et al., 2019, for an example in the context of addictive television series watching).

6.6 Conclusion

Despite these limitations, this study contributes to understanding of the relationships between depression, loneliness, AMW, and AYU. This study showed that depression was positively

associated with AYU, whereas loneliness was positively related to AMW. Furthermore, AMW was moderately associated with AYU. Crucially, the present study is the first to examine mukbang watching as a potential maladaptive coping and compensatory behaviour. However, future studies should be conducted to further delineate the etiological factors involved and the uniqueness and similarities with other addictive online behaviours or eating disorders.

CHAPTER 7: Emotion regulation difficulties and addictive mukbang watching: The mediating role of psychological distress and impulsivity

7.1 Introduction

As suggested in the previous chapters, regular mukbang watching may transform into an unregulated and excessive online behaviour resulting in AMW. In Chapter 4, a study with 236 Turkish emerging adult mukbang watchers developed and validated the Mukbang Addiction Scale using symptoms outlined in the components model of addiction including salience, withdrawal, relapse, tolerance, mood modification, and conflict (Griffiths, 2005). In Chapter 6, a smaller study with 217 Turkish university students who watched mukbang in the past month reported AMW was positively associated with both loneliness and addictive YouTube use. However, the aforementioned studies recruited a relatively small number of participants from a less diversified participant pool (e.g., narrow age difference, same ethnicity/nationality). Nevertheless, extant evidence suggests studies that take AMW into consideration as an emerging addictive online behaviour and investigate its correlates are warranted.

To date, very few attempts have been made to understand the underlying mechanisms and correlates of AMW. As concluded in Chapter 6, AMW was positively related to daily time spent watching mukbang, loneliness, and addictive *YouTube* use, but not to depression (Kircaburun et al., 2021c). It was argued that AMW might have been used as a maladaptive coping strategy in attempts to diminish the feeling of loneliness and escape the unpleasant reality where individuals feel alienated and less socially connected. A pilot study with 170 Turkish university students explored the uses and gratifications of AMW and concluded that

AMW may be an extension of real-life food addiction and/or disordered eating (Kircaburun et al., 2022a). Surprisingly, despite the aforementioned attempts, emotional and psychological components associated with AMW have yet to be explored by taking higher number of factors into consideration together.

The Interaction of Person-Affect-Cognition-Execution (I-PACE) model (Brand et al., 2019) is one of the widely used theoretical models in technology-related behavioural addictions literature. The I-PACE model posits that emotional and psychological factors are among the general predisposing variables that influence vulnerability to development and maintenance of general and specific types of internet use disorders (Brand et al., 2019). More specifically, the present study focused on the interrelated constructs that comprise the core characteristics stage of the I-PACE model including emotion regulation (i.e., emotion regulation difficulties), psychological distress (e.g, depression, anxiety, stress), and impulsivity.

Some individuals have a higher ability to regulate their emotions whereas others suffer from elevated emotion regulation difficulties (ERDs). High ERDs increase the possibility of engaging in erratic behaviours in attempts to escape from negative emotional situations and cope with distress (Gratz & Roemer, 2004). ERDs overlap with psychological distress and often coexist with elevated psychological distress (Castella et al., 2013). Individuals with ERDs and psychological distress may be at greater risk of regulating unpleasant emotions using activities that provide immediate pleasure (Cashwell et al., 2017). ERDs and psychological distress has been demonstrated to be a common predictor of various online and offline addictive behaviours including disordered eating (Lavender & Anderson, 2010), food addiction (Tatsi et al., 2019), sex addiction (Cashwell et al., 2017), internet addiction (Evren et al., 2018), and internet gaming disorder (Wu et al., 2020). Consequently, addictive behaviours are used as a maladaptive coping strategy to avoid negative feelings that arise from more ERDs and psychological distress including sadness, boredom, and irritation (Evren et al., 2018).

Depression is characterised by disordered emotion regulation. Cognitive biases and deficits in cognitive control that are present in depressed individuals arise from emotion dysregulation (Joormann & Stanton, 2016). Similarly, emotion regulation can augment or diminish fear, depending on the emotion regulation strategy employed. Emotion regulation problems explain incremental variance in anxiety disorder symptoms (Cisler et al., 2010). Furthermore, individuals vary in their ability to regulate emotions and cope with stress.

It has been well established that those with higher ability to regulate emotions can deal with stress and suffer stress-related health problems (Wang & Saudino, 2011). What's more, high levels of emotion dysregulation is associated with higher self-reported and cognitive impulsivity, and individuals with poorer emotion regulation report more impulsive behaviours (Schreiber et al., 2012). Emotion dysregulation has been related to different facets of impulsivity including positive urgency, negative urgency, lack of perseverance, and sensation seeking (d'Acremont & Van der Linden, 2007; Deng & Zhang, 2020; King et al., 2018; Pepe et al., 2022). Consequently, it appears that individuals' poor ability to regulate their emotions can lead to psychological Distress and impulsive behaviours.

Individuals high in ERDs and psychological distress often use the social networking sites (SNSs) for mood alteration which can, in turn, transform into SNS addiction (Brand et al., 2019; Liu & Ma, 2019). Although it has never been empirically shown, the same pattern may apply for mukbang watching, another popular SNS activity. Mukbang watching is perceived as an entertaining pastime activity that gives pleasure with auditory and visual stimuli produced as a result of the act of food eating (Anjani et al., 2020). Some viewers have successfully achieved positive mood alteration by watching mukbang (Kircaburun et al., 2021b), making mukbang a potential candidate to deal with ERDs and psychological distress.

Furthermore, AMW overlaps with SNS addiction which is also positively correlated with ERDs and psychological distress (Brand et al., 2019; Evren et al., 2018; Kircaburun et al., 2021c; Lavender & Anderson, 2010; Liu & Ma, 2019). It has previously been argued that AMW is an extension of real-life disordered eating and food addiction (Kircaburun et al., 2022a), which might suggest that some food addicts and disordered eaters may also use AMW as a way to deal with ERDs and psychological distress. Therefore, there is some evidence suggesting that AMW may be another activity that promotes immediate pleasure, and used as a maladaptive coping strategy to deal with ERDs and psychological distress.

Another important indicator of addictive behaviours is impulsivity. Some scholars have examined impulsivity by highlighting the cognitive components of impulse control including attentional impulsiveness, motor impulsiveness, and non-planning impulsiveness (Patton et al., 1995). Impulsivity has recently been conceptualised as having five distinct facets. These are positive urgency (acting without thinking with positive emotions), negative urgency (acting without thinking with negative emotions), lack of premeditation (acting out without giving a through consideration), lack of perseverance (having problems with demonstrating consistent behaviours), and sensation seeking (Cyders et al., 2014). Impulsive individuals tend to think less and make fewer conscious judgments when reacting to outside stimuli, act without thinking enough about the consequences, and feel urgency and engage in behaviour that may be harmful to them when faced with emotional difficulties (Arce & Santisteban, 2006).

Similar to those with elevated ERDs and psychological distress, impulsive individuals are also more vulnerable to developing and maintaining addictive behaviours both in online platforms (e.g., general and specific types of internet-related addictive behaviours) and the real world (Brand et al., 2019). Global impulsivity, positive urgency, and negative urgency facets of impulsivity have all been positively associated with food addiction (VanderBroek-Stice et al., 2017). In a study with 151 adults from a community sample, positive urgency, negative

urgency, lack of premeditation, and lack of perseverance were positively related to eating disorder symptoms in binge eating disorder (Kenny et al., 2019). Furthermore, positive urgency, negative urgency, and lack of perseverance were positively associated with addictive *Facebook* use among 676 *Facebook* users (Rothen et al., 2018), and with addictive pornography use among 13,778 Hungarian adults (Böthe et al., 2019). Among 4,039 television series viewers, positive urgency, negative urgency, lack of premeditation, and lack of perseverance were associated with addictive binge-watching (Flayelle et al., 2019).

Despite the emphasised role of impulsivity and its distinct facets on addictive (i.e., addiction-related) behaviours (Thomsen et al., 2018), their role on AMW has yet to be investigated. Those with low impulse control may engage in AMW in attempts to deal with their adverse emotions by watching pleasurable visuals of someone eating food with excitement just as they use compulsive eating to cope with strong positive and negative emotions and urges to act rashly (VanderBroek-Stice et al., 2017). Mukbang watching might replace using of other types of addictive behaviours (e.g., food addiction, addictive internet use, addictive pornography use) to obtain the desired emotion reinforcement for impulsive individuals with its social, sexual, entertainment, virtual eating, and relaxation features (Kircaburun et al., 2021a). Consequently, individuals with poor impulse control may be at more risk to become addictive mukbang watchers, given their diminished self-regulation abilities (Thomsen et al., 2018).

The present study is important because, as the I-PACE model posits (Brand et al., 2019), each specific behaviour should be taken into consideration with their unique features and characteristics. Even though the core components (i.e., ERDs, psychological distress, impulsivity) used to predict AMW in the present study have already been examined for other addictive online behaviours, they may have different and unprecedented associations with AMW. Based on the theoretical model of I-PACE and the existing empirical evidence, the present study investigated the role of three overlapping constructs (i.e., ERDs, psychological

distress, and impulsivity) in predicting AMW. It was hypothesised that all study variables would be directly positively associated with AMW. Furthermore, based on the presented empirical evidence, it was hypothesised that psychological distress dimensions (i.e. depression, anxiety, stress) and impulsivity facets (e.g., positive urgency, negative urgency, lack of perseverance, lack of premeditation, sensation seeking) would play mediator role between ERDs and AMW. Furthermore, given the important well-established role of activity-specific behaviours in addictive online behaviours (Brand et al., 2019), daily time spent on watching mukbang was included into the study as a control variable.

7.2 Methods

7.2.1 Participants and procedure

A total of 572 individuals completed an online survey that was promoted in *Prolific.co* (i.e., a crowdsourcing platform that allows researchers to recruit participants). Of these, 59 participants indicated that they had not watched mukbang in the past seven days and were not used in the subsequent analysis. Therefore, the total sample comprised 513 adult mukbang watchers (54% female; $M_{age}=32.05$, $SD=11.14$) whose ages ranged between 18 and 75 years. Participation in the study was voluntary and anonymous, and all individuals were older than 18 years. Each participant was paid £1.68 for their involvement in the study via the *Prolific.co* platform. Ethical approval for the study was taken from the research team’s university’s ethics committee and complied with the Helsinki declaration.

Table 7. 1. Participants’ demographic characteristics and mukbang watching behaviours

Variable	N	%
<i>Gender</i>		
Females	275	53.6
Males	232	45.2

	Other	6	1.2
<i>Age</i>			
	18-23 years	129	25.1
	24-29 years	132	25.7
	30-39 years	152	29.6
	40-75 years	100	19.5
<i>Ethnicity</i>			
	Caucasian	337	65.7
	Black/African	70	13.6
	Asian	43	8.4
	Mixed	28	5.5
	Other	18	3.5
	Hispanic/Latino	17	3.3
<i>Country of residence</i>			
	United Kingdom	236	46.0
	United States of America	156	30.4
	Canada	45	8.8
	South Africa	45	8.8
	Europe ^a	19	3.7
	Australia	9	1.8
<i>Consider themselves as regular mukbang watchers</i>			
	Yes	367	71.5
	No	146	28.5
<i>Daily time spent watching mukbang</i>			
	Rarely watch mukbang	101	19.7
	Between 1-60 minutes	329	64.1
	Between 61-120 minutes	57	11.1
	Between 121-180 minutes	18	3.5
	Between 181-240 minutes	6	1.2

Daily number of mukbang videos watched

Rarely watch mukbang	120	23.4
1-2	293	57.1
3-5	83	16.2
6-8	13	2.5

Note. ^a=Europe comprises Ireland (8 participants), Poland (4 participants), Spain (3 participants), Netherlands (2 participants), Portugal (1 participant), Italy (1 participant).

7.2.2 Measures

Demographic variables: Participants first answered a series of questions regarding their demographic characteristics and mukbang watching behaviours including gender, age, race/ethnicity, country of residence, daily time spent watching mukbang, daily number of different mukbang videos watched, whether they were regular mukbang watchers (i.e., watch mukbang at least a couple of times a week) (see Table 1).

Problematic Mukbang Watching Scale (PMWS): The 15-item PMWS (Kircaburun et al., *in review*) was used to assess AMW (e.g., “*I sometimes prefer watching mukbang rather than meeting friends or participate in hobbies that I used to enjoy before*”). PMWS was developed reviewing the items of Binge-watching Engagement and Symptoms Questionnaire (BWESQ; Flayelle et al., 2019) and Social Media Disorder Scale (SMDS; Van den Eijnden et al., 2016). The unidimensional PMWS (Kircaburun et al., *in review*) had robust construct validity as a result of confirmatory factor analysis ($\chi^2 = 213.35$, $df = 85$, $p < 0.001$, RMSEA = 0.07 CI 90% [0.06, 0.09], SRMR = 0.04, CFI = 0.95, GFI = 0.91). Items are scored on a five-point scale (1=*never*, 5=*always*). Higher scores indicate greater risk of mukbang addiction (Cronbach’s $\alpha = .92$).

Difficulties in Emotion Regulation Scale (DERS-16): The 16-item DERS-16 (Bjureberg et al., 2016) was used to assess emotion regulation difficulties (ERDs). The DERS-16 comprises items (e.g., “*I am confused about how I feel*”) that assess lack of emotional clarity, difficulties engaging in goal-directed behaviour, impulse control difficulties, limited access to effective emotion regulation strategies, and nonacceptance of emotional responses. Items are scored on a 5-point scale (1=*never*, 5=*always*). Higher scores indicate greater ERDs ($\alpha=.95$).

Depression Anxiety Stress Scale (DASS-21): The 21-item DASS-21 (Henry & Crawford, 2005) was used to assess psychological distress dimensions including depression (e.g., “*I could not seem to experience any positive feeling at all*”), anxiety (e.g., “*I was worried about situations in which I might panic and make a fool of myself*”), and stress (e.g., “*I found it difficult to relax*”) in the past seven days. Items are scored on a 4-point scale (1=*never*, 4=*almost always*). Higher scores indicate greater psychological distress. The internal consistency coefficients were high in the present study, ranging from .85 for anxiety, .88 for stress, and .93 for depression.

Short UPPS-P Impulsive Behavior Scale (SUPPS-P): The 20-item SUPPS-P (Cyders et al., 2014; Lynam, 2013) was used to assess impulsivity facets including negative urgency (e.g., “*When I am upset, I often act without thinking*”), positive urgency (e.g., “*I tend to act without thinking when I am really excited*”), sensation seeking (e.g., “*I quite enjoy taking risks*”), lack of premeditation (e.g., “*I usually think carefully before doing anything [reverse coded]*”), and lack of perseverance (e.g., “*I finish what I start [reverse coded]*”). Items are scored on a 4-point scale (1=*strongly disagree*, 4=*strongly agree*). Higher scores indicate greater impulsivity. Cronbach’s alpha values of impulsivity facets ranged between .72 (sensation seeking) to .87 (positive urgency) from lowest to the highest respectively.

7.2.3 Statistical analysis

SPSS 23 software was used to analyse the data. The internal consistency coefficients were determined using reliability analysis. Frequency and descriptive statistics were run to identify demographic features of the participants, and *t*-tests were used to examine gender differences among study variables. Pearson's correlation was used to calculate the correlation coefficients among study variables. AMOS software was used to test the hypothesised model via applying path analysis. In order to indicate good fit Root Mean Square Residuals (RMSEA) and Standardised Root Mean Square Residuals (SRMR) should be below .05, and Goodness of Fit Index (GFI) and Comparative Fit Index (CFI) should be higher than .95. Also, RMSEA and SRMR < .08 is acceptable, and GFI and CFI > .90 is acceptable (Kline, 2011). Bootstrapping was performed via 5000 bootstrap samples and 95% bias-corrected confidence intervals.

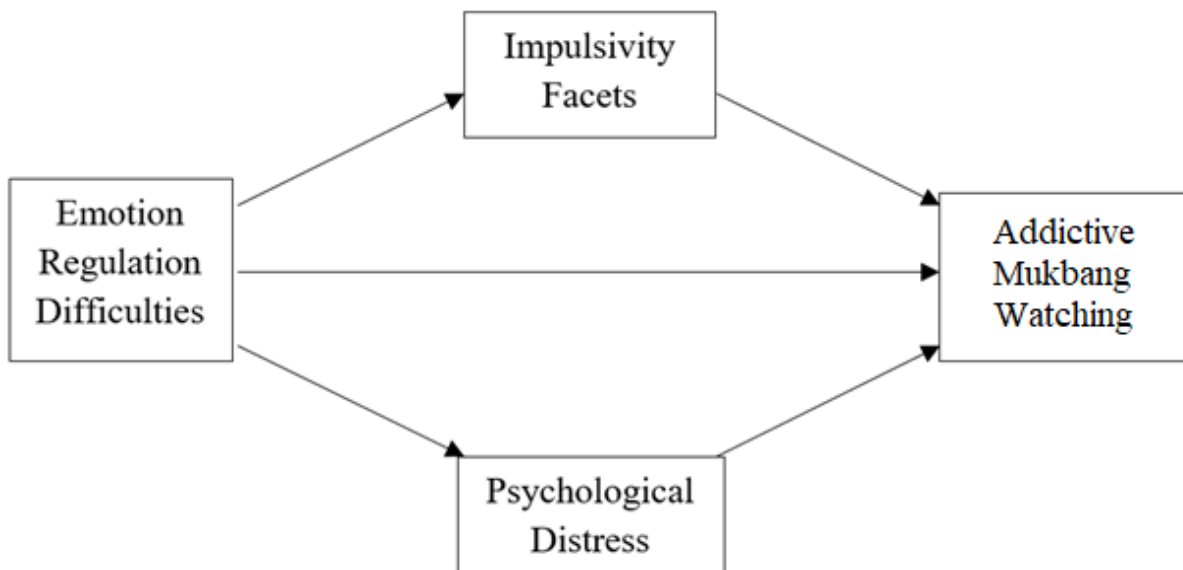


Figure 7. 1. Hypothesised model

7.3 Results

The results of *t*-tests are presented in Table 2. Females scored higher on ERDs ($t[513] = 2.81$, $p = .01$), anxiety ($t[513] = 2.22$, $p = .05$), and stress ($t[513] = 2.38$, $p = .05$), whereas males had higher scores of sensation seeking ($t[513] = -3.79$, $p = .001$). There were no differences between genders in terms of AMW ($t[513] = .77$, $p = .44$), negative urgency ($t[513] = 1.79$, $p = .08$), lack of perseverance ($t[513] = .14$, $p = .89$), lack of premeditation ($t[513] = 1.52$, $p = .13$), positive urgency ($t[513] = -.85$, $p = .39$), and depression ($t[513] = .80$, $p = .94$) scores.

Table 7. 2. Comparison of the scores of study variables between females and males

	Females (N=275)	Males (N=232)	<i>t</i> -test	Cohen's <i>d</i>
Addictive mukbang watching	2.12	2.07	.77	.06
Emotion regulation difficulties	2.58	2.35	2.81**	.25
Depression	2.00	2.00	.08	.00
Anxiety	1.77	1.65	2.22*	.20
Stress	2.08	1.95	2.38*	.20
Negative urgency	2.54	2.43	1.79	.16
Lack of perseverance	1.89	1.88	.14	.02
Lack of premeditation	1.90	1.83	1.52	.14
Sensation seeking	2.32	2.55	-3.79***	.34
Positive urgency	1.88	1.93	-.85	.06

* $p < .05$, ** $p < .01$, *** $p < .001$

Mean scores, standard deviations, skewness values, kurtosis values, and correlation coefficients are presented in Table 3. According to skewness and kurtosis values (ranging between -1 and 1), data met the assumption of normality. AMW was positively moderately

correlated with ERDs ($r = .31, p < .001$), positive urgency ($r = .32, p < .001$), anxiety ($r = .34, p < .001$), daily time spent watching mukbang ($r = .47, p < .001$), and daily number of mukbang videos watched ($r = .43, p < .001$), and weakly positively with negative urgency ($r = .28, p < .001$), lack of perseverance ($r = .09, p < .05$), lack of premeditation ($r = .17, p < .001$), sensation seeking ($r = .14, p < .01$), depression ($r = .24, p < .001$), and stress ($r = .27, p < .001$). Age was negatively weakly correlated with AMW ($r = -.17, p < .001$).

Table 7. 3. Mean scores, standard deviations, and Pearson's correlations of the study variables (N=513)

	1	2	3	4	5	6	7	8	9	10
1. Addictive mukbang watching	-									
2. Emotion regulation difficulties	.31***	-								
3. Depression	.24***	.71***	-							
4. Anxiety	.34***	.60***	.64***	-						
5. Stress	.27***	.72***	.72***	.73***	-					
6. Negative urgency	.28***	.69***	.51***	.43***	.58***	-				
7. Lack of perseverance	.09*	.23***	.26***	.20***	.12*	.22***	-			
8. Lack of premeditation	.17***	.28***	.25***	.22***	.19***	.32***	.54***	-		
9. Sensation seeking	.14**	-.09*	-.03	.01	.01	.01	-.10*	.03	-	
10. Positive urgency	.32***	.39***	.30***	.30***	.32***	.50***	.32***	.42***	.28***	-
11. Daily time spent	.47***	.00	-.01	.09*	-.09*	-.03	-.03	.02	.12*	.02
<i>Mean score</i>	2.09	2.48	2.00	1.72	2.03	2.49	1.88	1.86	2.42	1.90
<i>Standard deviation</i>	.73	.93	.80	.60	.64	.67	.56	.51	.68	.64
<i>Skewness</i>	.52	.38	.61	.90	.44	-.26	.36	.37	.08	.52
<i>Kurtosis</i>	-.48	-.66	-.54	.39	-.20	-.23	-.03	.50	-.48	.10

* $p < .05$, ** $p < .01$, *** $p < .001$

Hypothesised model (Figure 1) was tested using path analysis. Path analysis results are given in Figure 2. The model had acceptable fit indices ($\chi^2/df=5.66$, RMSEA=.09 [CI 90% (.08, .11)], SRMR=.06, CFI=.94, GFI=.95). ERD was directly ($\beta = .14, p < .05$) and indirectly ($\beta = .17, p < .01$) related to AMW via positive urgency and anxiety. Stress ($\beta = -.08, p = .23$), depression ($\beta = -.01, p = .88$), negative urgency ($\beta = .07, p = .17$), lack of perseverance ($\beta = *.04, p = .42$), lack of premeditation ($\beta = .01, p = .79$), and sensation seeking ($\beta = .04, p = .26$) were not significantly related to AMW. Daily time spent watching mukbang was also included into the model as a control variable and it was moderately positively associated with AMW ($\beta = .45, p < .001$). Tested model explained 36% of the variance in AMW.

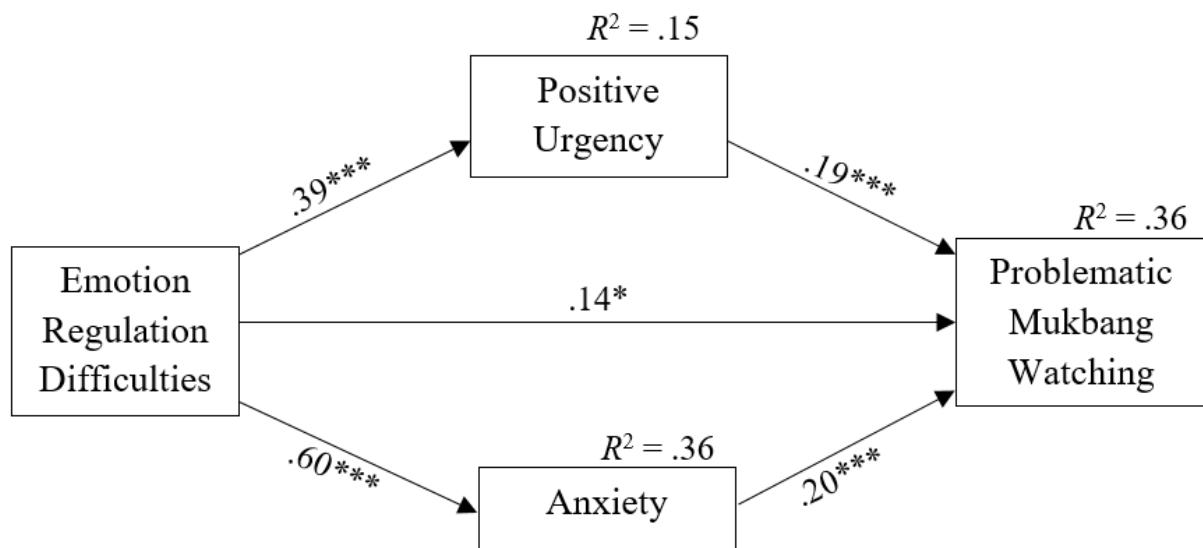


Figure 7. 2. Standardised path coefficients among variables

Note. Non-significant standardised coefficients were not depicted in figure for clarity. ERD was positively related to stress ($\beta = .73, p < .001$), depression ($\beta = .71, p < .001$), negative urgency ($\beta = .69, p < .001$), lack of perseverance ($\beta = .23, p < .001$), and lack of premeditation ($\beta = .28, p < .001$), and non-significantly to sensation seeking ($\beta = -.09, p = .05$). Stress ($\beta = -.08, p = .23$), depression ($\beta = -.01, p = .88$), negative urgency ($\beta = .07, p = .17$), lack of perseverance ($\beta = *.04, p = .42$), lack of premeditation ($\beta = .01, p = .79$), and sensation seeking ($\beta = .04, p = .26$) were not significantly related to AMW. Daily time spent watching mukbang was also included into the model as a control variable and it was moderately positively associated with AMW ($\beta = .45, p < .001$). * $p < .05$, ** $p < .01$, *** $p < .001$

7.4 Discussion

The purpose of the present study was to investigate the relationship of AMW with emotional regulation difficulties (ERDs), psychological distress, and impulsivity facets while controlling for demographics and mukbang watching behaviours. ERDs, anxiety, positive urgency, daily time spent watching mukbang, and daily number of mukbang videos watched were predictors of greater AMW. On the other hand, depression, stress, negative urgency, lack of perseverance, lack of premeditation, and sensation seeking were non-significantly related to AMW in the model.

In line with the hypothesis and expectations, ERDs were positively related to AMW. Those who reported more difficulties in regulating their emotions indicated more addictive watching of mukbang. This is in line with the previous studies indicating a consistent relationship between ERDs and other addictive online behaviours including general addictive internet use, internet gaming disorder, addictive pornography use, and addictive social media use (Evren et al., 2018; Liu & Ma, 2019; Musetti et al., 2022; Wu et al., 2020). This is also consistent with a previous study associating ERDs with elevated binge-watching (Rubenking & Bracken, 2018). Individuals with poor emotion regulation appear to use online activities to control and regulate their emotional experiences, and mukbang watching may be one of these activities. Mukbang's features including entertainment, social connection, and virtual eating satisfaction might result in successful attempts to deal with negative thoughts and emotions by watching mukbang, and this may lead to regular mukbang watching becoming AMW for some individuals with increased ERDs. However, it should be noted that the relationship between ERDs and AMW was weak.

Partially in line with expectations, only anxiety was related to elevated AMW. Despite the positive correlation of depression and stress with AMW in the correlation analysis, they were non-significant in the model regressed with other variables. Anxiety had a more robust

association with AMW when compared to depression and stress. This may be because participants used AMW to cope with and/or avoid their anxious thoughts and feelings rather than depressive and stressful thoughts and feelings. Mukbang watching is a social and relaxing activity where an individual produces satisfactory and relaxing sounds and visuals while eating food with great enthusiasm and communicating with the viewers (Kircaburun et al., 2021a).

Therefore, watching mukbang has the potential to become an addictive online behaviour for those with anxiety in attempts to relieve and/or avoid their anxiety for real-life problems (e.g., work-related problems and/or being lonely and/or alienated from social community). However, contrary to anxious individuals, those with elevated depression and stress might have tried to alleviate their negative feelings by engaging in compulsive eating themselves rather than watching others eat, trying to obtain immediate pleasure from consumption of high caloric food instead of having the virtual satisfaction of eating. Nevertheless, the present preliminary results should be replicated using larger study groups from different ethnic groups and countries.

Partially in line with the hypothesis, only the positive urgency facet of impulsivity was positively associated with AMW. All facets of impulsivity were positively correlated with AMW in the correlation analysis but only positive urgency remained significant when put into the regression model with other variables. Positive urgency being positively associated with AMW is consistent with previous studies associating positive urgency with other addictive behaviours including food addiction, binge eating disorder symptoms, addictive *Facebook* use, addictive pornography use, and addictive binge-watching (Böthe et al., 2019; Flayelle et al., 2019; Kenny et al., 2019; Rothen et al., 2018; VanderBroek-Stice et al., 2017). It appears that participants in the study engaged in AMW as a negative reinforcer particularly to modulate their strong positive emotions, rather than using AMW as a positive reinforcer to cope with their strong negative emotions. Further studies are needed to understand the unique role of

impulsivity facets in AMW and the underlying mechanisms of the associations between the latter and former.

Partially consistent with expectations, some dimensions of psychological distress and impulsivity partially mediated the relationship between ERDs and AMW. More specifically, anxiety and positive urgency played a mediator role between ERDs and AMW. More ERDs were associated with elevated anxiety and positive urgency, and more anxiety and positive urgency were related to exacerbated AMW engagement. This is in line with the studies reporting that individuals who struggle to regulate their emotions are susceptible to be more vulnerable for developing psychological and behavioural problems (Cisler et al., 2010; Deng & Zhang, 2020; Joorman & Stanton, 2016; King et al., 2018; Pepe et al., 2022; Wang & Saudino, 2011). Developing and using adaptive coping and emotion regulation strategies with difficulties in life instead of coping with problems via using maladaptive strategies seems to be an important preventive factor to avoid mental health and behavioural problems including psychological distress and impulsivity (Berking & Wupperman, 2012).

Consistent with the previous studies (Kircaburun et al., 2021b, 2021c), mukbang watching behaviours were positively related to more AMW. More specifically, daily time spent watching mukbang was significantly associated with AMW. This finding supports the notion that use of specific online activities are consistent indicators of specific addictive online behaviours (Bryant et al., 2007). There were no gender differences in AMW scores. This contradicts previous studies that reported higher involvement in AMW among male participants (Kircaburun et al., 2021c). However, these studies that reported higher AMW for males were conducted using a sample that comprised only Turkish university students from a single university. Therefore, future studies are needed to establish the role of gender in the development of AMW. Age was negatively correlated with AMW in the correlation analysis but it was non-significant in the model with other variables.

7.5 Limitations

The present study had some limitations that should be taken into account when interpreting the results. First, the majority of the sample was Caucasian while other ethnicities were in minority, which decreased the generalizability of the study findings. There are significant cultural differences (e.g., between Caucasians and Asians) reported in the literature in terms of attitude towards mukbang watching and mukbang watching motivations (Pereira et al., 2019). The present results should be replicated using more diversified and equally distributed samples across the world. Second, data were collected using self-report questionnaires, which is susceptible to a number of methodological biases including memory recall and social desirability. Future studies should investigate the aforementioned relationships found in the study using more in-depth data collection methods (e.g., qualitative interviews). Third, the directions of the relationships cannot be determined based on the present results due to the cross-sectional nature of the study. Future studies should test causal associations among the present study's variables using longitudinal designs.

7.6 Conclusion

Despite the aforementioned limitations, the present study is the first to examine the emotional and psychological correlates of AMW using an international adult sample. AMW was positively related to ERDs, positive urgency, anxiety, and daily time spent watching mukbang. These findings suggest that mukbang watching may become an addictive behaviour among some individuals with emotion regulation and mental health problems. It may be further argued that AMW may be like other addictive online behaviours (i.e., addictive online gaming, addictive social media use, addictive online gambling, addictive cybersex) where the behaviour is used as a maladaptive coping strategy to deal with emotional and psychological problems. Emerging evidence suggests that AMW should be taken as seriously alongside other addictive online behaviours. The present findings warrant further exploration of possible correlates and

consequences of AMW. Moreover, the present results contribute to the theoretical model of I-PACE by reporting specific associations among predisposing factors and an emerging online behaviour. The present findings support the notion of I-PACE model which suggests that each addictive online behaviour has unique characteristics that should be explored.

CHAPTER 8: Addictive mukbang watching and its relationship to disordered eating and internet addiction: A pilot study among emerging adult mukbang watchers

8.1 Introduction

So far, empirical chapters (Chapters 4, 5, 6, and 7) indicated that there are several associated factors that may exacerbate addictive mukbang watching (AMW) including loneliness, mukbang watching motivations, and daily time spent watching mukbang. However, the potential association between AMW and negative consequences has not yet been explored, despite the established positive association between AMW and addictive YouTube use in Chapter 6. Individuals watch mukbang using different internet applications and platforms that facilitate interacting with videos and live streams (simultaneously and non-simultaneously) by commenting on and liking (or disliking) the mukbang content. Such tools that enable individuals to obtain different gratifications from watching mukbang increase the likelihood of promoting online addictions as well as to the specific applications that are being used to watch mukbang (Griffiths, 2018; Kircaburun & Griffiths, 2019).

Even though the ‘umbrella’ term ‘internet addiction’ is fundamentally different from being addicted to an activity on the internet (Griffiths, 1999), addictive use of activities facilitated by the internet co-exist alongside generalised internet addiction (Király et al., 2014), especially when such activities have no offline equivalent such as social networking use (Pontes & Griffiths, 2014). Given that mukbang watching is mostly facilitated by social networking sites and online live streaming channels (Choe, 2019), it is logical to expect that AMW would be associated with generalised internet addiction. This is important because internet addiction has

well established adverse consequences upon individuals' mental health and physical wellbeing similar to the negative effects that arise from substance-related addictions including psychopathology, insomnia, poor sleep quality, academic failure, and experiencing family and relationship problems (Kuss & Griffiths, 2012b; Lam, 2014; Ng & Wiemer-Hastings, 2005).

As noted in previous chapters, one of the prominent gratifications obtained from mukbang watching is 'vicarious eating'. Watching mukbang enables viewers to satisfy their food cravings, experience the feeling of binge-eating themselves, and experiencing vicarious satiation via visual and auditory stimulation from the mukbangers themselves (Choe, 2019; Gillespie, 2019), all of which could serve as compensation for acts that an individual avoids performing in real life and/or as a fulfilment of known experiences regarding the watched act by triggering specific memories (Brennan, 2017). According to the compensatory internet use model, individuals tend to use online activities (e.g., social networking, internet pornography, internet gaming, internet gambling) as a compensation for their unattained offline needs and those who successfully satisfy their needs using a specific online activity can sometimes become excessive users of that particular activity (Kardefelt-Winther, 2014). However, given that maladaptive coping exacerbates negative emotions and mitigates positive emotions and wellbeing (Folkman & Lazarus, 1988), watching mukbang as a maladaptive coping strategy to deal with real-life eating urges may also result in adverse consequences.

For instance, individuals that frequently watch mukbang may consume more than they normally would because individuals' consumption norms could easily be affected by others' consumption and mukbangers typically eat very large portions of food during a single broadcast (Spence et al., 2019). Furthermore, watching mukbang could promote problematic eating practices for those who are already experiencing different eating problems (Donnar, 2017). Some newspaper publications have supported these arguments by reporting that watching mukbang was damaging teenagers' and younger viewers' eating behaviours by modelling

maladaptive behaviour (e.g., binge-eating) and perceiving it socially acceptable (Park, 2018). Consequently, given that AMW is more likely to be associated with more severe negative consequences of mukbang watching compared to recreational mukbang watching (Andreassen, 2015), AMW is also more likely to relate to increased real-life problematic eating practices (i.e., disordered eating).

This is important because disordered eating (e.g., anorexia nervosa, bulimia nervosa, and binge eating disorder) is one of the notable health problems among adolescents and emerging adults, and eating disorders have become more common in recent decades especially in combination with obesity (Keski-Rahkonen & Mustelin, 2016; Schmidt et al., 2016). Among a nationally representative sample of U.S. adults, the total prevalence of lifetime eating disorders was almost 2% and emerging adults were at more risk of disordered eating compared to older age groups (Udo & Grilo, 2018). A recent cross-sectional survey comprising a self-selected sample of emerging adults from different faculties of a Turkish university found that 10% of the sample was classed as at high risk for having an eating disorder (Sanlier et al., 2016). While young women make up the majority of individuals with anorexia and bulimia nervosa, men and women are nearly equally at risk for having binge eating disorder (Schmidt et al., 2016).

Having any type of eating disorder has detrimental health consequences. In a systematic review of European studies, approximately 20% of individuals with eating disorders were reported to experience non-suicidal self-injury because of their disordered eating (Keski-Rahkonen & Mustelin, 2016). Furthermore, relative to those with no history of eating disorder, those with anorexia nervosa had significantly higher odds of being categorised as underweight, whereas others with binge eating disorder had significantly increased odds of having obesity or extreme obesity (Udo & Grilo, 2018). Furthermore, eating disorders have been associated with increased risk of suicide attempts and death, implying that individuals with disordered eating have an increased mortality risk (Keski-Rahkonen & Mustelin, 2016).

Grounded in the assumptions of the compensatory internet use model (Kardefelt-Winther, 2014) and coping style theory (Folkman & Lazarus, 1988), the present study tested a structural equation model to examine the predictive role of AMW on disordered eating and internet addiction. While constructing the research model, the temporal precedence of the variables was decided by taking the theoretical rationale into consideration. Even though there may be bidirectional relationships among variables, the present study hypothesised that being frequently exposed to visual and audio stimuli of excessive eating (with the mukbangers' augmented demonstration of pleasure and satisfaction received from eating) would manipulate viewers' real-life practices of eating and relationship with food, which would exacerbate disordered eating.

8.2 Methods

8.2.1 Participants and procedure

The participants comprised Turkish mukbang viewers who watched mukbang at least once in the past 30 days and completed an online survey. The survey was promoted on different online courses of a distance learning centre at a private Turkish university. Participants were informed about the study in the beginning of the survey. Students gave their informed consent acknowledging that participation in the study would be voluntary and anonymous, and that they would not be rewarded for participation. A total of 952 students began the survey and 312 of them completed it (response rate 33%). Of these, 140 were mukbang viewers (66% female, $M_{age} = 21.66$, $SD = 1.88$, range = 19 to 29 years). Sample power and required sample size were checked using G*Power program with *a priori* analysis and the sample size ($n=140$) was sufficient for valid results with power > 0.85 , $\alpha = .05$, effect size $f^2 = .18$ because it exceeded the minimal sample size needed ($n=133$) (Faul et al., 2009). Ethical approval for the study was received from the university's ethics committee, and complied with the Declaration of Helsinki.

8.2.2 Measures

Mukbang Addiction Scale (MAS): The MAS (Kircaburun et al., 2020b) was used to assess AMW (e.g., “How often during the last year have you felt an urge to watch mukbang more and more?”). The initial validation study indicated mostly sound psychometric properties for unidimensional structure ($\chi^2/df = 2.42$, RMSEA = .08 [CI 90% (.03, .13)], SRMR = .01, CFI = .99, GFI = .98). The scale consists of six items that assess components of six addiction-like symptoms (salience, withdrawal, mood modification, conflict, tolerance, relapse) outlined in the biopsychosocial framework of addiction (Griffiths, 2005). Items (1 = *never*, 5 = *always*) were averaged to create an index of AMW (Cronbach’s $\alpha = .93$).

Bergen Internet Addiction Scale (BIAS): The IAS (Kircaburun & Griffiths, 2018) was used to assess internet addiction (e.g., “How often during the last year have you tried to cut down on the use of internet without success?”). As with the MAS, the BIAS comprises six items that assess components of six addiction-like symptoms (salience, withdrawal, mood modification, conflict, tolerance, relapse; Griffiths, 2005). Items (1 = *never*, 5 = *always*) were averaged to create an index of internet addiction ($\alpha = .93$).

SCOFF Eating Disorders Scale: The Turkish form (Aydemir et al., 2015) of the five-item SCOFF Eating Disorders Scale (Hill, Reid, Morgan, & Lacey, 2010) was used to assess risk of eating disorder symptoms including anorexia nervosa, bulimia nervosa, body dissatisfaction, and unspecified eating disorders (e.g., “Do you make yourself sick because you feel uncomfortably full?”, “Do you worry that you have lost control over how much you eat?”, “Do you believe yourself to be fat when others say you are too thin?”). Items (0 = *no*, 1 = *yes*) were averaged to create an index of disordered eating ($\alpha = .71$).

8.2.3 Statistical analysis

In order to evaluate validity and reliability of the scales and to show the relationships between the variables' frequency, descriptive tests, Pearson correlations, confirmatory factor analysis (CFA) and structural equation modelling (SEM) were conducted using SPSS 23.0 and AMOS 23.0 software. For the CFA and SEM, the maximum likelihood estimation method was used. SEM was carried out by using a bootstrapping method with 5000 bootstrapped samples and 95% bias-corrected confidence intervals. According to Hu and Bentler (1999), thresholds for good and acceptable fit values are as follows: Root Mean Square Residuals (RMSEA) $<.05$ is good, Standardised Root Mean Square Residuals (SRMR) $<.05$ is good, Goodness of Fit Index (GFI) $>.95$ is good, Comparative Fit Index (CFI) $>.95$ is good, also RMSEA $<.08$ is acceptable, SRMR $<.08$ is acceptable, GFI $>.90$ is acceptable, CFI $>.90$ is acceptable.

8.3 Results

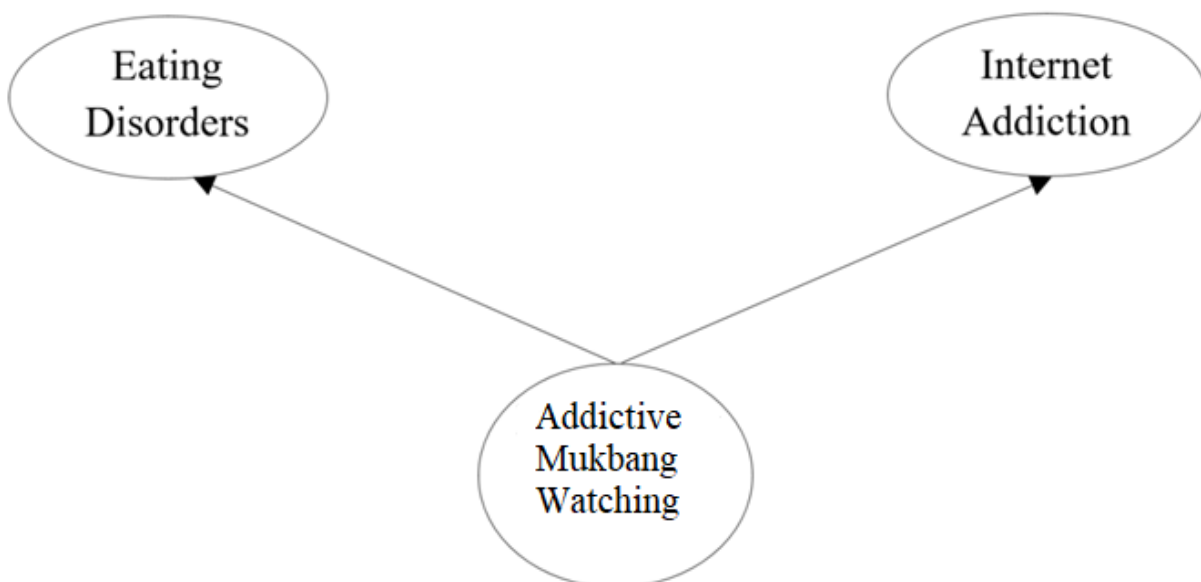


Figure 8. 1. Hypothesised model of the relationship of AMW to disordered eating and internet addiction

Note. For clarity, items of the constructs have not been depicted in the figure. Latent variables in the model are represented with a circle and observed variables with rectangles.

* $p < .05$, ** $p < .01$, *** $p < .001$

Mean scores, standard deviations, and Pearson correlation coefficients are shown in Table 1. The analysis indicated that AMW was positively correlated with disordered eating ($r = .24, p < .01$) and internet addiction ($r = .26, p < .01$). However, the correlations were relatively low. In order to examine the effect of AMW on disordered eating and internet addiction, SEM was conducted (Figure 1).

Table 8. 1. Mean scores, standard deviations, and Pearson correlation coefficients of the study variables

	1	2	3
Disordered eating	-		
Internet addiction	.09	-	
Addictive mukbang watching	.24**	.26**	-
<i>M</i>	.31	2.91	1.43
<i>SD</i>	.31	1.21	.78

** $p < .01$.

Goodness of fit indices of the final model indicated adequate fit to the data ($\chi^2/df = 1.78$, RMSEA = .07 CI 90% [.06, .09], SRMR = .07, CFI = .95, GFI = .86). AMW was positively associated with both disordered eating ($\beta = .43, p < .01$; 95% CI [.10, .47]) and internet addiction ($\beta = .29, p < .01$; 95% CI [.13, .70]). AMW explained 18% of the variance in disordered eating and 9% in internet addiction (Figure 2).

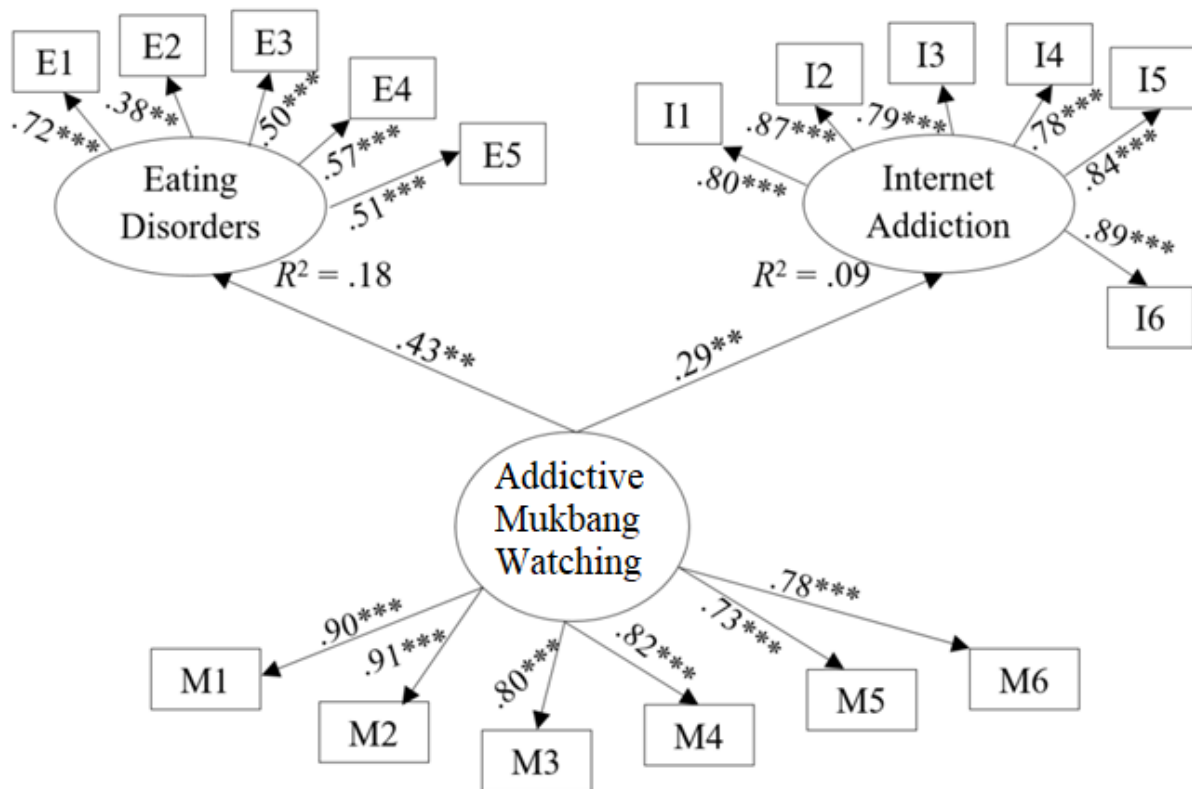


Figure 8. 2. Final model of the significant path coefficients demonstrating the relationship of AMW to eating disorders and internet addiction

Note. Latent variables in the model are represented with circles and observed variables with rectangles. * $p < .05$, ** $p < .01$, *** $p < .001$

8.4 Discussion

With the constant developments in internet technologies, individuals fulfil a variety of needs using specific online activities. Even though extant literature has given much attention to addictive uses of many of these activities (e.g., online gaming, online social networking, online sex, online shopping), mukbang watching has been neglected. In order to fill this gap in the scientific literature, the present preliminary study investigated the association between AMW and two related constructs (i.e., internet addiction and disordered eating). According to the tested structural equation model, and consistent with the theoretical assumptions of compensatory internet use model and coping style theory, AMW was positively associated with both disordered eating and internet addiction.

The finding regarding the exacerbating impact of AMW on disordered eating was consistent with the scarce literature. The act of binge eating of large portions of food demonstrated by thin and slim mukbangers has been claimed to manipulate viewers' well-established perceptions about consumption and being fit (Hong & Park, 2018). Watching videos of excessive food consumption by healthy-looking individuals may facilitate viewers to perceive binge eating as a normal behaviour that does not lead to negative consequences (e.g., gaining weight, health problems). This may promote binge eating disorder, which is the most common eating disorder in the world (Mitchell, 2016), as well as other types of disordered eating (e.g., bulimia nervosa) as a result of maladaptive attempts to cope with binge eating (Mitchell, 2016). Although the association between AMW and binge eating was empirically demonstrated for the first time in the online eating literature, the present finding is in line with the online sex studies reporting the exacerbating role of online pornography watching on real-life sexual hyperactivity (Bóthe et al., 2019).

Another detrimental impact of dealing with the real-life eating urges by watching others eat food may be that it negatively affects an individual's relationship with real-life eating. Previous studies from the pornography use literature have demonstrated that excessive use of online porn in both adolescence and adulthood leads to real-life sexual dysfunctions including low sexual desire and increased erectile dysfunctions (Zimbardo et al., 2016). Similarly, unrealistic visual and audio stimuli demonstrated in mukbang videos (augmented acts of pleasure and satisfaction shown by the mukbangers while eating [Gillespie, 2019]) can lead to diminished pleasure received from actual eating, and in turn, promote disordered eating (e.g., anorexia nervosa) through the displacement of real eating with virtual eating. Consequently, AMW could potentially facilitate different eating disorders among different viewers.

Another important finding of the present study was that AMW was positively associated with internet addiction. This result is consistent with the existing empirical literature suggesting that

internet addiction is an umbrella term for addictive use of specific types of activities facilitated by the internet including online gaming addiction, online shopping addiction, online social networking addiction, and online pornography addiction (Montag et al., 2015). Montag et al. (2015) argued that the most consistent and strongest relationship with internet addiction was social networking addiction, because social networking use has no offline equivalent (i.e., it is a behaviour that can only be carried out online). Some individuals first air their video on *AfreecaTV* and then upload it to social media while others upload and stream directly on social media (Gillespie, 2019). Thus, it is not surprising that AMW significantly contributed to elevated internet addiction among the participants.

8.5 Limitations

The present study has some limitations that should be taken into account when interpreting the results. To begin with, the utilisation of cross-sectional design prevents conclusions with respect to the causal associations among, and temporal ordering of, the variables. Therefore, further studies are needed to confirm the results illustrated in the present study using longitudinal designs. Another limitation was that the study comprised a very small number of Turkish emerging adults who watched mukbang in the past month. However, this is not a common behaviour in Turkey so numbers were expected to be low. This limits the generalizability of the present results (both inside and outside of Turkey). Future studies should attempt to replicate the findings here recruiting higher numbers of participants from different age groups and cultures. Third, the data were collected using a self-report online survey in a self-selected sample, which is susceptible to well-known biases and limitations including social desirability and lack of introspection. Consequently, future studies should examine the relationships found in this study using more in-depth data collection tools and methods. Also, using a similar self-report format to test constructs simultaneously promotes the possibility that shared method variance and response bias might account for the found relationships between the variables.

8.6 Conclusion

Despite its limitations, to the best of authors' knowledge, the present study is the first to report that AMW might be associated with negative consequences. More specifically, the results demonstrated that AMW was positively associated with both disordered eating and internet addiction. Spending excessive time watching mukbang and being preoccupied with watching mukbang to facilitate mood modification could lead to the onset, development, and maintenance of different eating disorders and generalised internet addiction among a small minority of individuals. It appears that being visually exposed to others' eating promotes unhealthy eating practices and potentially addictive technology use. Health professionals and clinicians may take mukbang watching into account when developing effective strategies to prevent disordered eating and internet addiction, although further studies are needed.

CHAPTER 9: The role of procrastination between personality traits and addictive mukbang watching among emerging adults

9.1 Introduction

Previous chapters highlighted the potential addictiveness of watching mukbang (e.g., Kircaburun et al., 2021b; 2021c), and that addictive mukbang watching (AMW) was positively associated with internet addiction (Kircaburun, et al., 2021d). Chapter 6 utilised the compensatory internet use model to explain AMW (Kardefelt-Winther, 2014), where online behaviours may act as a compensation for unattained offline needs. Chapter 7 investigated the emotional and psychological markers of AMW by utilising the I-PACE model's implications (Brand et al., 2019), while Chapter 9 suggested that AMW may lead to additional addictive behaviours such as internet addiction and disordered eating. Therefore, previous empirical chapters indicated that AMW is a phenomenon that is both distinct and overlapping with other addictive online and offline behaviours. Additionally, there are various emotional and psychological risk factors that are shared among these behaviours, as well as unique determinants specific to AMW, supporting the assumptions of both the I-PACE model and compensatory internet use model.

To date, and in comparison to research exploring other online addictions (i.e., gaming, gambling, social media), there is a paucity of research exploring individual difference predictors of AMW (Kircaburun et al., 2020). Given that personality has previously been demonstrated to be a strong predictor of addictive online behaviour (Kayaş et al., 2016, Young & Rodgers, 1998), in the present study, the role of personality (more specifically, the Big Five personality traits and dark personality traits) are hypothesised as being predictors of AMW.

The Big Five personality model (Costa & McCrae, 1992) has been explored in relation to various online addictions. The Big Five model comprises extroversion (i.e., warmth, assertiveness), neuroticism (i.e., anxiety, vulnerability), agreeableness (i.e., trust, altruism), openness (i.e., curious, ideas), and conscientiousness (i.e., competence, self-discipline; McCare & Costa, 1997). A meta-analytic review of the Big Five personality traits and internet addiction found significant relationships between all traits and internet addiction. Neuroticism was positively associated with internet addiction, whereas extroversion, agreeableness, openness, and conscientiousness were all negatively associated with internet addiction (Kayaş et al., 2016). The authors concluded that characteristics of trait neuroticism (more specifically, anxiety, lack of social confidence), and underdeveloped self-awareness, predispose these individuals to be more likely to develop addiction to the internet. Regarding the negative relationships between extroversion, agreeableness, openness, conscientiousness, and internet addiction, the authors posited that characteristics associated with these traits such as assertiveness (extraversion), curiosity (openness), self-discipline (conscientiousness), and lower aggression (agreeableness) ‘protect’ these individuals from developing internet addiction.

The Big Five personality traits have also been found to be predictive of other addictive online behaviours. For example, high neuroticism, low extroversion, and low agreeableness have been found to predict videogame addiction (Vollmer et al., 2014), and high extroversion, low conscientiousness, and low openness have been found to predict Facebook addiction (Kanat-Maymon et al., 2018). Moreover, high neuroticism has also been found to predict Facebook addiction (Tang et al., 2016), and low agreeableness is a direct predictor of Instagram addiction (Kircaburun & Griffiths, 2018a).

Research has also shown associations between dark personality traits (i.e., narcissism, Machiavellianism, psychopathy, sadism, spitefulness) and online addictions. The online

environment may be particularly appealing to individuals with higher levels of these dark traits, because the online environment offers behavioural opportunities that may not be as possible in offline contexts (i.e., enhancing self-presentation, de-individuated aggression, and manipulation), and therefore may facilitate the development of addictive online behaviour. Testament to the addictive potential of online environments, (i) trait psychopathy has been associated with social media addiction (Chung et al., 2019; Demircioğlu & Göncü Köse, 2021; Lee, 2019), (ii) Machiavellianism has been positively associated with internet use disorder (Sindermann et al., 2018), (iii) narcissism has been associated with Facebook addiction (Barilovskaia et al., 2020), (iv) trait sadism has been directly associated with addictive online gaming (Kircaburun et al., 2018), and (v) spitefulness has been directly associated with addictive smartphone use (Balta et al., 2019). Based on the significant associations between dark personality traits and addictive internet use, researchers have concluded that individuals with higher levels of dark personality traits may be more vulnerable to developing addictive online behaviours than those with lower levels of dark personality traits (Kircaburun & Griffiths, 2018b).

In addition to the aforementioned empirical evidence, the I-PACE model indicates that an individual's development and maintenance of addictive use of online platforms can be explained by the interplay between personality characteristics, social cognitions, and cognitive and affective components (Brand et al., 2016, 2019). According to the I-PACE, individual differences including personality traits possess specific vulnerabilities for developing addictive behaviours (Brand et al., 2016). Given the theoretical rationale and substantial research evidence regarding associations between the Big Five personality traits, dark personality traits, and development of different online addictions, there is good rationale to expect these traits to relate to AMW. For instance, personality features that facilitate greater loneliness and social isolation, including neuroticism, introversion, disagreeableness, psychopathy, sadism, and

spitefulness (Buecker, Maes, Denissen, & Luhmann, 2020), may be more common among those who use mukbang watching as a compensation of real-life interpersonal interaction given that individuals who watch mukbang feel less lonely and more socially connected when interacting with mukbangers and other viewers (Choe, 2019). Similarly, less conscientious individuals may engage in mukbang watching to avoid their real-life tasks and assignments given that mukbang watching was reported to be a good entertainment that may help individuals pass a lot of time (Kircaburun et al., 2021a). Some individuals report that they enjoy watching others eat a large portion of extremely hot and/or spicy foods in a short period of time simply because they enjoy the eater's suffering during the show (Kang et al., 2020). Obtaining pleasure from others' suffering is suggestive of sadistic and spiteful personality traits as well as more Machiavellianism and psychopathy (Sindermann et al., 2018). Consequently, both Big Five personality dimensions and darker aspects of personality could be associated with elevated vulnerability for developing and maintaining AMW.

Finally, in the present study, the indirect relationship of these personality traits to AMW via procrastination is explored. According to the I-PACE model (Brand et al., 2019), individuals' mental states and social cognitions can play a mediating role between their individual differences and excessive technology use. Procrastination (i.e., the delay of an intended action despite the negative consequences; Steel, 2007) has been found to be a particularly strong predictor of internet addiction (Davis et al., 2002; Geng et al., 2018; Hernandez et al., 2019). Although procrastination and addictive internet use are considered to be highly inter-correlated (see David et al., 2002), the constructs are still considered as distinct from each other (Thatcher et al., 2008). Both academic procrastination (i.e., situational procrastination) and general/life routine procrastination (i.e., dispositional procrastination; Uzun et al., 2014) have been positively associated with internet addiction. Procrastinators may also find mukbang watching an easy way of postponing decisions and actions given that mukbang videos have been reported

to be entertaining and engaging in a way that viewers sometimes forget how much time they spend watching mukbang or end up spending much more time than they initially intended for watching mukbang (Kircaburun et al., 2021a).

Importantly, procrastination has previously been demonstrated to (both partially and sequentially) mediate the relationship between personality traits and technology-based addictions (Wang et al., 2019). A study with 271 Dutch emerging adults found that trait procrastination was related to lack of conscientiousness, lack of extraversion, and facets of neuroticism (Schouwenburg & Lay, 1995). More specifically, less conscientious, more introverted, and more neurotic individuals tended to demonstrate more procrastinating behaviour. A model testing study with 251 Chinese university students showed that individuals who were less agreeable and more open to experience were more prone to procrastinate (Zhou, 2020).

Even though Big Five personality traits and their relationship with procrastination have been extensively studied over the years, it is only more recently that the association between dark personality traits and procrastination have been investigated. A study with 190 German university students and employees reported Dark Triad traits (i.e., narcissism, Machiavellianism, psychopathy) were positively correlated with decisional and behavioural procrastination (Müller et al., 2021). A study with 357 adults suggested that all Dark Tetrad traits (i.e., narcissism, Machiavellianism, psychopathy, sadism) were positively related to active procrastination (e.g., deliberately delaying decisions and actions; Hughes & Adhikari, [2021]). Consequently, the core facets of dark personality traits have been suggested to share many features of procrastination including low self-regulation (Lyons & Rice, 2014). The present study extrapolates the aforementioned relationships, and hypothesises that procrastination may mediate the relationship between personality traits (i.e., the Big Five personality traits, dark personality traits) and online addictions, including AMW.

The primary aim of the present study was to explore the direct and indirect associations of Big Five personality traits (i.e., extroversion, neuroticism, agreeableness, openness, conscientiousness) and dark personality traits (i.e., narcissism, Machiavellianism, psychopathy, sadism, spitefulness) with AMW via procrastination. Based on the aforementioned rationale, the following hypotheses are proposed: (i) Big Five personality traits (i.e., extroversion, low neuroticism, conscientiousness, low openness, agreeableness) will be negatively associated with procrastination and AMW (Kayaş et al., 2016; Wang et al., 2019); (ii) dark personality traits (i.e., narcissism, Machiavellianism, psychopathy, sadism, spitefulness) will be positively associated with procrastination and AMW (Kircaburun & Griffiths, 2018b; Sindermann et al., 2018); procrastination will be positively associated with AMW (Wang et al., 2019); and (iv) procrastination will mediate the relationships of the Big Five personality traits and dark personality traits with AMW (Wang et al., 2019).

9.2 Methods

9.2.1 Participants and procedure

The online survey was promoted in online courses of a distance learning centre of Yaşar University. Informed consent was taken from all participants acknowledging that they participated in the study voluntarily and anonymously. Participants were not compensated for their participation in the study. A total of 222 Turkish university students (69% female), aged between 19 and 35 years (mean = 21.68 years, $SD = 1.94$), were recruited for the study. In order to participate in the study, participants had to have watched mukbang in the previous week. Participants had to tick a box indicating that they had watched mukbang in the previous week in order to continue filling out the survey. Participants were asked to answer all questions in order to advance in and complete the survey. Data were not analysed before finalising the data collection. The data collection process was ended once an adequate sample size was reached to analyse the present research variables (i.e., 10 times the number of parameters in path

analysis and confirmatory factor analysis; Kline [2011]). The research team's university's ethical board approved the study before the recruitment of the participants, and complied with the Helsinki declaration.

9.2.2 Measures

Mukbang Addiction Scale (MAS): The MAS (Kircaburun et al., 2020) was used to assess addictive mukbang watching. The MAS comprises six items (e.g., “*How often in the past year have you spent a lot of time thinking about mukbang or planned watching mukbang?*”), rated on a five-point Likert scale ranging from “*very rarely*” to “*very often*”, that reflects six core elements of behavioural addiction (i.e., salience, mood modification, tolerance, withdrawal, conflict, relapse) outlined in the components model of addiction (Griffiths, 2005). Higher scores reflect more addictive mukbang watching. The Cronbach's alpha coefficient was excellent in the present study ($\alpha = .91$).

Unintentional Procrastination Scale (UPS): The UPS (Ferne et al., 2017) was used to assess procrastination. The Turkish adaptation was carried out in the present study by following the standard back-translation process (Beaton et al., 2000). Confirmatory factor analysis (CFA) was applied using AMOS 23 software, which indicated mostly good fit to the data ($\chi^2 = 22.11$, $df = 9$, $p < .001$, RMSEA = .08 CI 90% [.04, .13], SRMR = .03, CFI = .98, GFI = .97). Items' standardised factor loadings ranged from .75 to .84 suggesting that all items had a significant role in the scale. The UPS comprises six items (e.g., “*I really want to get things finished in time, but I rarely do*”) rated on a 4-point Likert scale from “*do not agree*” to “*agree very much*”. Higher scores reflect more procrastination behaviour. The internal consistency was excellent in the present study ($\alpha = .90$).

Dark Personality Traits: The Single Item Narcissism Scale – Turkish (Özsoy et al., 2017) was used as a template to assess all dark personality traits. Extant definitions from literature (Jonason & Webster, 2010; Marcus et al., 2014; O'Meara et al., 2011; Özsoy et al., 2017) were

used to define each personality dimension and participants rated how much these traits related to themselves, from 1 = “*absolutely disagree*” to 7 = “*absolutely agree*” (e.g., *I am a narcissist* = selfish, self-centred; *I am Machiavellian* = manipulate and exploit others towards their own end, deceit or lie to get their way; *I am a psychopath* = callous, insensitive, lack remorse, not concerning about morality of their actions; *I am sadistic* = enjoying inflicting pain on others, tend to intentionally hurt others; *I am spiteful* = willing to harm oneself in order to hurt others). The construct validities of the single items used to assess dark personality traits in the present study were assessed by examining the correlation coefficients obtained. There were moderate correlations among all dark personality traits. This is similar to the results of previous studies that used evaluated scales to assess dark personality traits including the Turkish forms of Dark Triad Dirty Dozen and Short Dark Triad (Özsoy et al., 2017).

Big-Five Personality Traits: Single items were used to assess each personality dimension (i.e., extroversion, neuroticism, agreeableness, openness, conscientiousness). Widely used definitions (Rammstedt & John, 2007; Zuckerman et al., 1993) were used to define each personality trait and participants rated how much these traits related to themselves, from 1 = “*absolutely disagree*” to 7 = “*absolutely agree*” (e.g., *I am an extrovert* [reverse coded] = not outgoing and sociable, reserved, introverted in social situations and relations; *I am conscientious* = being trustworthy in doing tasks and duties, organised, planned, doing a thorough job; *I am open to new experience* = being less conservative in life, being open to new experience, having an active imagination; *I am agreeable* = not conflicting, understanding and easygoing in social relations; *I am neurotic* = tends to find fault with others, easily irritated, emotionally unstable). The construct validities of the single items used to assess Big Five personality traits in the present study were assessed by examining the correlation coefficients obtained. Extroversion was negatively correlated with neuroticism. Agreeableness had a negative correlation with most of the dark personality traits. Neuroticism was positively

correlated with all dark personality traits. These results were similar to the findings of previous investigations carried out with different Turkish samples (Ardıç & Özsoy, 2016; Özsoy, 2017).

9.3 Results

Table 1 illustrates mean scores, standard deviations, skewness and kurtosis values, and correlations of the study variables. Pearson's correlation analysis indicated that AMW was negatively correlated with extroversion ($r = -.32, p < .001$) and positively correlated with procrastination ($r = .31, p < .001$), narcissism ($r = .37, p < .001$), Machiavellianism ($r = .45, p < .001$), psychopathy ($r = .60, p < .001$), sadism ($r = .63, p < .001$), and spitefulness ($r = .52, p < .001$). Next, AMOS 23 software was used to test the saturated mediation model (Figure 1). In path analysis, 10,000 bootstrapping samples and 95% interval confidence were used. According to the guidelines by Kline (2011), the sample size of the present study was adequate for conducting a path analysis because it was more than 10 times the amount of the number of parameters in path analysis. However, since the number of male and female participants was not adequate (Kline, 2011), group differences in variable scores and model results were not examined separately for males and females.

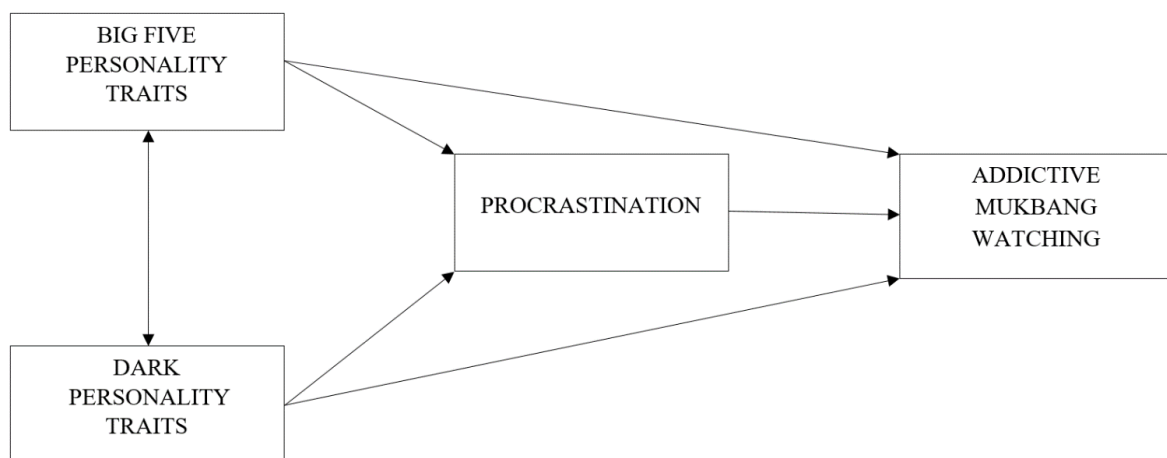


Figure 9. 1. Hypothesised model of the study variables

Table 9. 1. Mean scores, standard deviations, skewness-kurtosis values, and Pearson's correlations of the study variables (N=222)

	1	2	3	4	5	6	7	8	9	10	11	12
1. Addictive mukbang watching	-											
2. Procrastination	.31***	-										
3. Extroversion	-.32***	-.43***	-									
4. Neuroticism	.12	.29***	-.29***	-								
5. Agreeableness	-.06	.00	-.13	.07	-							
6. Openness	-.06	-.06	.11	-.03	.39***	-						
7. Conscientiousness	.11	-.20**	-.00	.04	.31***	.45***	-					
8. Narcissism	.37***	.27***	-.16*	.25***	-.15*	-.10	-.05	-				
9. Machiavellianism	.45***	.26***	-.26***	.21**	-.12	-.19**	-.14*	.63***	-			
10. Psychopathy	.60***	.25***	-.35***	.19**	-.16*	-.23**	-.07	.52***	.64***	-		
11. Sadism	.63***	.23**	-.32***	.13*	-.09	-.20**	-.02	.54***	.61***	.83***	-	
12. Spitefulness	.52***	.23**	-.25***	.17*	-.14*	-.20**	-.05	.50***	.59***	.69***	.72***	-
<i>M</i>	9.99	13.29	5.20	3.77	4.80	5.23	4.80	2.65	2.23	1.95	1.69	2.26
<i>SD</i>	5.25	5.00	1.80	1.94	1.62	1.76	1.71	1.78	1.68	1.65	1.54	1.73
<i>Skewness</i>	1.69	.37	-.76	.10	-.61	-.87	-.44	.85	1.31	1.65	2.23	1.31
<i>Kurtosis</i>	2.73	-.66	-.42	-1.05	-.21	-.15	-.58	-.32	.84	1.63	3.92	.75

* $p < .05$, ** $p < .01$, *** $p < .001$

Since the present study was cross-sectional in which data regarding all dependent and independent variables were collected using the same assessment instrument, common method bias was examined. Harman's one-factor test was used to investigate common method bias by including all scale items into one factor and running a dimension reduction test in SPSS (see Podsakoff et al., 2012 for a review). As a result, since the total variance extracted by one factor did not exceed the recommended threshold of 50% (34.05% in the present study), the present authors concluded that the results were not affected by a common method bias.

Table 9. 2. Standardised estimates of total, direct, and indirect effects on addictive mukbang watching (N=222)

	Effect	S. E.	C.I. (LB, UB)
Extroversion → Addictive mukbang watching (total effect)	-.12*	.06	(-.23, -.01)
→ Addictive mukbang watching (direct effect)	-.06	.06	(-.18, .07)
→ Procrastination → Addictive mukbang watching (indirect effect)	-.07**	.03	(-.14, -.02)
Conscientiousness → Addictive mukbang watching (total effect)	.14*	.06	(.03, .24)
→ Addictive mukbang watching (direct effect)	.18**	.06	(.06, .31)
→ Procrastination → Addictive mukbang watching (indirect effect)	-.05**	.02	(-.10, -.01)
Sadism → Addictive mukbang watching (total effect)	.34*	.14	(.07, .60)
→ Addictive mukbang watching (direct effect)	.34*	.14	(.07, .60)

→ Procrastination → Addictive mukbang watching (indirect effect) .00 .02 (-.05, .04)

Note. S.E. = Standard error; C.I. = Confidence interval; LB = Lower bound; UB = Upper bound. Only the significant total effects are shown in the table. Full report is available upon request. * $p < .05$, ** $p < .01$, *** $p < .001$.

Big Five personality traits (i.e., extroversion, neuroticism, agreeableness, openness, conscientiousness) and dark personality traits (i.e., narcissism, Machiavellianism, psychopathy, sadism, spitefulness) were included into model as distal predictors. Procrastination was the mediator and AMW was the outcome variable. Standardised estimates of total, direct, and indirect effects on AMW are shown in Table 2. Extroversion was negatively indirectly associated with AMW via procrastination ($\beta = -.07, p < .01$; 95% CI [-.14, -.02]). Conscientiousness ($\beta = .18, p < .01$; 95% CI [.06, .31]), sadism ($\beta = .18, p < .05$; 95% CI [.07, .60]), and procrastination ($\beta = .19, p < .01$; 95% CI [.05, .32]) were directly positively related to AMW. The tested model explained 48% of the variance in AMW (Figure 2).

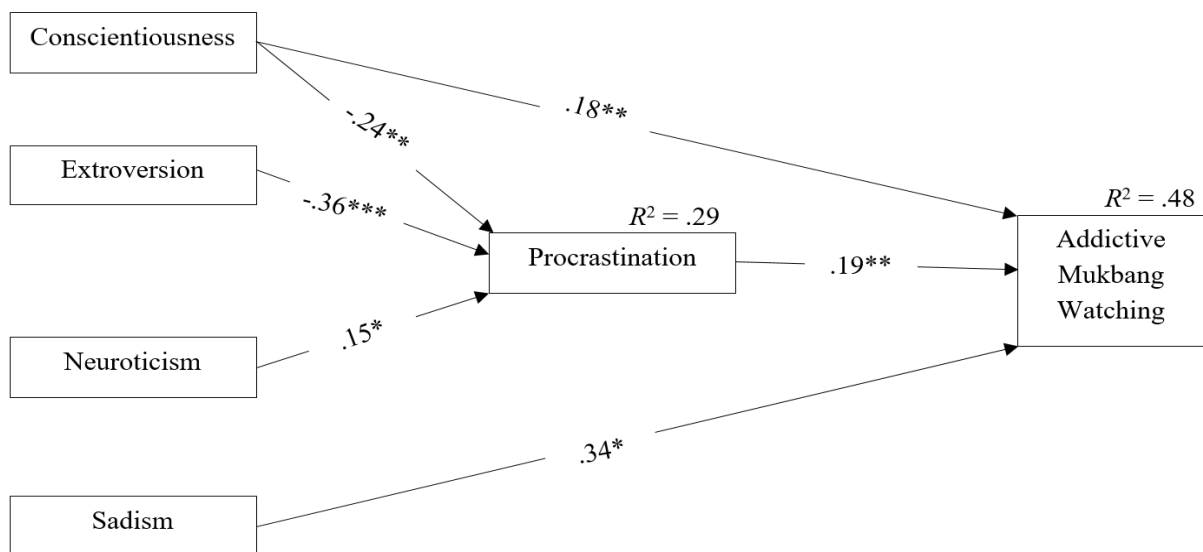


Figure 9. 2. Final model of the relationships among variables in total sample

Note. For clarity covariances among independent variables and insignificant direct effects are not depicted in the figure. Narcissism ($\beta = .15, p = .05; \beta = -.03, p = .64$), Machiavellianism ($\beta = .01, p = .92; \beta = .05, p = .44$), psychopathy ($\beta = .01, p = .95; \beta = .21, p = .09$), spitefulness ($\beta = .03, p = .75; \beta = .08, p = .28$), agreeableness ($\beta = .01, p = .89; \beta = -.06, p = .31$), and openness ($\beta = .11, p = .11; \beta = .04, p = .53$) were not related to procrastination and AMW respectively in the model. Furthermore, sadism was not directly associated with procrastination ($\beta = -.00, p = .97$) and the relationship regarding extroversion ($\beta = -.05, p = .39$) and neuroticism ($\beta = -.06, p = .23$) with AMW were also non-significant. * $p < .05$, ** $p < .01$, *** $p < .001$

9.4 Discussion

The aim of the present study was to investigate direct and indirect relationships of the Big Five personality traits (i.e., extroversion, neuroticism, agreeableness, openness, conscientiousness) and dark personality traits (i.e., narcissism, Machiavellianism, psychopathy, sadism, spitefulness) with addictive mukbang watching (AMW) via procrastination. Partially consistent with the study's expectations, extroversion and conscientiousness were indirectly negatively related to AMW via procrastination. Furthermore, conscientiousness and sadism were positively directly associated with AMW. The indirect effect of neuroticism on AMW via procrastination was non-significant.

Procrastination was positively related to AMW. This preliminary finding is consistent with the extant literature that has identified procrastination as one of the important risk factors for elevated addictive use of online activities (Geng et al., 2018). For instance, procrastination was found to mediate the relationship between low self-control and social media addiction (Ekşi et al., 2019). Procrastination has also been found to play a partial explanatory role between sensation seeking and adolescent smartphone addiction (Wang et al., 2019). Similar to other online activities, watching mukbang videos can also attract procrastinators due to their entertainment and social aspects where mukbangers eat food while interacting with the viewers (Kircaburun et al., 2021a). Given the pleasurable and (sometimes) sensational aspects of

watching someone eat food (Kircaburun et al., 2021a), excessive (and in a minority of cases, addictive) mukbang watching can be another type of procrastination for some individuals.

Conscientiousness was not significantly correlated with AMW in the correlation analysis. However, it was directly positively related to AMW in the model. This may be because another variable acted as a suppressor variable and affected the relationship between conscientiousness and AMW (Ludlow & Klein, 2014). Conscientiousness was also indirectly negatively associated with AMW via procrastination. More specifically, low conscientiousness was associated with elevated procrastination, and in turn, elevated procrastination was related to elevated AMW. The negative association between conscientiousness and procrastination is in line with previous studies postulating that conscientiousness has a strong inverse relationship with procrastination and that less conscientious individuals are highly prone to lose focus on a determined task and procrastinate (Lee et al., 2006). It may be that recreational mukbang watching transforms into AMW for some of the less conscientious individuals because of its time-passing features that allow individuals postpone taking decisions and working on more important duties and tasks.

Procrastination fully mediated the relationship between extroversion and AMW. Low extroversion (i.e., introversion) was positively related to procrastination. This finding is consistent with the extant literature suggesting that introverts are more prone to engaging in procrastination (Tibbett & Ferrari, 2015). It may be that introverts' lower enthusiasm for real life social interaction and higher motivation to be left alone engaging in solitary activities leads them to procrastinate their academic and/or work duties and everyday activities (Steel & Klingsieck, 2016). It may be that conscientiousness and extroversion had more robust reverse relationship with procrastination, leading less conscientious and more introverted individuals to more procrastination-driven AMW than those with other personality traits that have weaker correlations with procrastination (e.g., agreeableness, openness to experience) in the present

sample. Nevertheless, further studies are needed to investigate the associations of Big Five personality dimensions with AMW by examining other demographic and psychological mediators and moderators and using longer and more detailed assessment tools that capture facets of Big Five traits to obtain greater clarification on the aforementioned associations.

All dark personality traits were positively moderately correlated with AMW. However, sadism was the only personality trait that was significantly directly associated with AMW in the model. This indicates that sadistic personality features most led to the addictive watching of mukbang when compared to other 'dark' traits. It may be that individuals who eat food in mukbang videos engage in different behaviours to attract viewers' attention and entertain them. For instance, while some people engage in food challenges where they try and eat an excessive amount of food in a limited period of time, others demonstrate apparent agony and pain when eating extremely spicy food (Kircaburun et al., 2021a). These different types of mukbang videos that demonstrate harm to others may attract individuals with sadistic tendencies to increasingly watch mukbang.

Given that psychopaths would ignore others' suffering instead of taking pleasure from it, they might not become dependent on watching mukbang videos simply these videos would not entertain them and/or result in positive mood modification (i.e., an important factor that turn recreational activity to addictive behaviour for some individuals; Griffiths, 2005). Furthermore, previous studies have largely shown that Turkish individuals with psychopathic traits score lower on addictive use of online activities when compared to others with higher levels of narcissism, Machiavellianism, sadism, and spitefulness (Kircaburun & Griffiths, 2018). Despite the persistent positive associations of narcissism, Machiavellianism, and spitefulness with addictive use of internet, social media, and gaming, these traits were non-significant when included into the model with sadism. This may be because mukbang watching is not as attractive as other online activities such as gaming, social media use, and online sex for

participants who have higher levels of dark traits other than sadism. It may be that (i) gaming is more addictive for narcissists due to its competitive nature, (ii) social media use is more addictive for Machiavellians and spiteful individuals due to its interpersonal manipulation and stalking features, and (iii) online sex is more addictive for psychopaths who seek out sensation and hypersexual experiences (Kircaburun & Griffiths, 2018; Kircaburun et al., 2018). Nevertheless, further studies that use more in-depth assessment tools for assessing personality traits (e.g., primary and secondary psychopathy, grandiose and vulnerable narcissism) are needed to examine the relationship between dark aspects of personality and AMW.

9.5 Limitations

There are several limitations that should be taken into account when considering the present study's results. First, this study assessed personality traits using single item scales. Each personality dimension was defined using existing definitions (Jonason & Webster, 2010; Marcus et al., 2014; O'Meara et al., 2011; Özsoy et al., 2017) and participants were asked to rate how much these traits related to themselves. This may be criticised for being brief and not being able to comprise essential content (Jones & Paulhus, 2014). However, the correlation analyses showed that there were adequate construct and convergent validities of the single item scales. Therefore, the single-item measures are arguably adequate (Özsoy et al., 2017). Nevertheless, future studies should replicate the present findings using different assessment tools to assess personality traits. Second, the data were collected using self-report measures, which are susceptible to well-known biases (e.g., social desirability, memory recall). Future studies should use more in-depth methods to examine the present associations. Third, the cross-sectional design prevents determining causal relationships based on the present findings. Future studies should adopt a longitudinal design to understand the directions of the relationships found in the present study.

9.6 Conclusion

Despite its limitations, this study is one of the first studies to investigate the personality correlates of AMW, and the mediating role of procrastination between personality traits and AMW. The present study addressed a gap in the literature and examined the individual difference predictors of AMW by providing cross-sectional evidence concerning the relationships of personality traits with AMW while taking procrastination into account. This study advances the current literature on addictive use of online activities by introducing an emerging addictive online behaviour (i.e., mukbang watching) which may be associated with other problematic and risky health outcomes. The present findings indicate that extroversion and conscientiousness were negatively indirectly associated with AMW via procrastination, and that procrastination, conscientiousness, and sadism were positively directly related to AMW. The results suggest that maladaptive personality-related procrastination may lead individuals to higher engagement in mukbang watching behaviour and experience potential physical and psychological harms from such excessive and addictive use. Although these preliminary findings should be replicated more widely before developing possible prevention strategies, it appears that some individuals engage in AMW behaviour and their personality and proneness to procrastination plays a contributory role in this behaviour.

CHAPTER 10: Addictive symptoms of mukbang watching: A qualitative interview study using directed content analysis

10.1 Introduction

The previous empirical chapters suggested that mukbang watching may be addictive for some individuals who use it as a form of social and eating compensation by demonstrating direct and indirect associations of AMW with several motivational, individual difference, emotional, psychological, and problematic behaviour correlates. More specifically, Chapters 6 and 7 investigated AMW among mukbang viewers, showing positive associations between AMW and loneliness, anxiety, emotion dysregulation, impulsivity, and addictive YouTube use. In Chapter 8, a structural equation modeling study involving 140 emerging adults found positive associations between AMW, internet addiction, and disordered eating. Chapter 9's study with 222 university students showed that personality traits including conscientiousness, sadism, and extroversion, as well as procrastination, were positively related to AMW (Kircaburun et al., 2022a).

Additionally, a path analysis of 170 emerging adults revealed that while eating gratification was positively associated with AMW, social gratification was not (Kircaburun et al., 2022b). These studies provide initial empirical evidence for the existence of AMW among a small group of individuals, but relied on cross-sectional methods and psychometric tools. To address the limitations of previous quantitative studies, research that employs more comprehensive methodologies to verify the presence of AMW among mukbang viewers are warranted. The present chapter aimed to further explore the addictive symptoms and negative outcomes associated with AMW, using a qualitative design to gather more in-depth and high-quality data and to corroborate the cross-sectional findings.

Consequently, the present study examined symptoms of AMW by using official diagnostic criteria of a behavioural addiction (in this case internet gaming disorder [IGD]) as a ‘blueprint’. The American Psychiatric Association (APA) introduced IGD as a tentative disorder in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5) in 2013. IGD was defined as “*persistent and recurrent use of the internet to engage in games, often with other players, leading to clinically significant impairment or distress*” (APA, 2013, p. 795). According to the APA, an individual should endorse five out of nine symptoms over a 12-month period (APA, 2013). These symptoms include (i) being excessively preoccupied with gaming, (ii) having withdrawal symptoms when not gaming, (iii) spending more and more time gaming, (iv) failed attempts to reduce or quit gaming, (v) losing interest in other hobbies apart from gaming, (vi) engaging in gaming despite its adverse consequences, (vii) deceiving others about gaming duration, (viii) achieving a positive mood by gaming, and (ix) risking, jeopardizing, or losing a job or relationship because of gaming (APA, 2013). These official symptoms of gaming disorder has been adapted to assess other technology-related behavioural addictions (e.g., social media disorder [Van den Eijnden et al., 2016], internet use disorder [Islam et al., 2020]).

The present study adapted the DSM-5 gaming disorder symptoms to assess AMW. A qualitative design was also used to obtain deeper understanding of AMW symptomatology. Previous studies have used qualitative methods to investigate different technology-related behavioural addictions including television binge-watching, online video watching addiction, and smartphone addiction (Flayelle et al., 2017; Jameel et al., 2019; Yang et al., 2021). For instance, content analysis of interviews with a focus group of seven regular television series viewers concluded that television series watching can become addictive with similarities to psychoactive substance addiction criteria and symptoms (Flayelle et al., 2017).

Another study by Jameel et al. (2019) using directed content analysis applied the components model of addiction (Griffiths, 2005) during interviews with 40 college students. It was concluded that there was evidence of smartphone addiction by identifying addiction components such as salience, tolerance, withdrawal, and conflict (Jameel et al., 2019). A thematic analysis study by Yang et al. (2021) with 20 young Chinese adults reported eight themes relating to watching online videos, one of which was addiction-like symptoms. The authors concluded that specific video content (e.g., mukbang, pornography), platform-driven continuous watching, and short-form videos were potentially addictive. Given the reliance on purely quantitative methodologies in previous studies examining mukbang watching addiction, the present study investigated AMW through interviews by applying directed content analysis by adapting the official DSM-5 criteria for gaming disorder.

Mukbang is an under-researched area, and the research to date has mainly used quantitative methodologies. These studies have failed to address the motivations that drive individuals to watch such videos, particularly those that have been identified at risk of mukbang addiction, as what drives addictive behaviour can vary individually (Dumitru et al., 2018). Where an area is under-researched and where little is known, then it is appropriate to use qualitative analysis in order to have a better understanding to identify specific areas to investigate further in future research. Employing a qualitative design could result in valuable insight above and beyond to what has been reported to date. As far as the present authors are aware, there have been no prior studies taking a qualitative approach to explore mukbang and addictive use of mukbang. Therefore, the present study is a novel study in which qualitative methodology is considered appropriate to support understanding in a greater depth. Consequently, this chapter aimed to explore nine addictive symptoms of AMW using a qualitative design.

10.2 Methods

10.2.1 Participants and procedure

The sample comprised eight regular mukbang viewers (five females) whose ages ranged between 21 and 33 years ($M_{\text{age}} = 26.62$ years). Six of the participants were from South Africa whereas the other two were from the UK and USA. The demographic characteristics of the participants are shown in Table 1. The recruitment of the participants was through crowdsourcing platform, *Prolific.co*. Each participant received £10 for taking part in the study. Participants acknowledged that participation was voluntary and anonymous, and gave their informed consent before participation. Approval for the study was received from the research team's university ethics committee and complied with the Helsinki Declaration.

Table 10. 1. Demographic characteristics of participants (N = 8)

Participant	Gender	Age	Country
P1	Male	26	South Africa
P2	Female	21	South Africa
P3	Female	30	USA
P4	Female	27	South Africa
P5	Male	33	UK
P6	Male	25	South Africa
P7	Female	24	South Africa
P8	Female	27	South Africa

10.2.2 Measures

Participants' mukbang watching behaviours and addictive symptoms were investigated using a semi-structured interview. Open-ended questions concerned addictive symptoms of mukbang watching (see Appendix for interview questions). The questions in the interview guide were theoretically based, following Kruger and Casey's (2015) framework where the introductory questions were more general aiming to explore the participant's mukbang behaviour. In order

to assess whether symptoms of addiction were present among mukbang watchers, an interview guide with open-ended questions was created assessing each of the symptoms used in the official diagnostic criteria of gaming disorder in the DSM-5 (APA, 2013) to ensure that there was consistency in each interview while allowing for any topics considered to be important to the participants to be covered. Semi-structured interviews were conducted to ensure consistency across all interviews while enabling flexibility (Robinson, 2014). The questions were formulated for the present study by the researchers using the aforementioned criteria, aiming to assess addictive mukbang watching. The questions used in the present study were different from the questions in the DSM-5.

The possible symptoms of AMW that were investigated comprised (i) preoccupation with mukbang watching (e.g., individuals constantly watching mukbang, when not watching mukbang individuals fantasizing about watching mukbang, thinking about previous mukbang videos that they watched, and/or anticipating the next time they will watch mukbang), (ii) withdrawal symptoms when unable to engage in mukbang watching (e.g., feeling restless, irritable, anxious, and/or sad if unable to watch mukbang or watch mukbang less than usual), (iii) tolerance (e.g., an increase in mukbang watching over time), (iv) inability to quit and/or reduce the time spent on mukbang watching (e.g., individuals trying to reduce the time spent watching mukbang or trying to quit watching mukbang but failing), (v) loss of interest in other hobbies due to mukbang watching (e.g., individuals preferring to watch mukbang rather than meeting their friends or participating in hobbies and pastimes that they used to enjoy before), (vi) continuing to watch mukbang despite problems (e.g., individuals losing sleep, having arguments with and family or friends, neglecting important duties because of mukbang watching), (vii) deceiving family/friends about mukbang watching (e.g., not letting others know how much time is actually spent watching mukbang or lying about their mukbang watching.), (viii) positive mood modification through mukbang watching (e.g., watching

mukbang to relieve a negative mood state such as helplessness, guilt, or anxiety), and (ix) risking relationships/jobs due to mukbang watching (e.g., losing a significant relationship because of mukbang watching, jeopardizing educational and/or occupational duties). Interviews were carried out and transcribed by the first author to support familiarisation of the dataset prior to coding.

10.2.3 Data analysis

Directed content analysis was chosen as the method to analyse the qualitative data to better understand the investigated phenomenon (Downe-Wambolt, 1992). Qualitative content analysis has been defined as a research method for subjective interpretation of the content of text data through a process of coding and systematic classification to identify themes or patterns (Hsieh & Shannon, 2005). The aim of the present study was to examine the presence or absence of addictive symptoms of mukbang watching by adapting the official diagnostic criteria of IGD (APA, 2013). Directed content analysis was used because this method aims to validate or extend a theoretical framework or theory (Hsieh & Shannon, 2005).

In the directed content analysis method, the text data are analysed by following the deductive use of theory (Hickey & Kipping, 1996; Potter & Levine-Donnerstein, 1999). First, all transcripts were coded into broad categories on the basis of predetermined categories of AMW criteria. After coding, the data were examined for each category to determine whether subcategories were needed for that category. Common concepts, which emerged in the focused interview questions, were identified as themes. An iterative process was used in which transcripts were coded and recoded until no new themes or addiction symptoms emerged. Data that could not be coded into one of the nine DSM-5 criteria were re-examined to describe different manifestations, which were then subsumed within one of the nine key themes if found related to some extent. In the final stage, the themes for the study as a whole were established. All quotes have a unique identifier (e.g., P2, F21 means 'Participant 2, female aged 21 years).

10.3 Results and preliminary discussion

Key theme 1 – Preoccupation (Salience)

The importance of watching mukbang in the lives and minds of individuals was highlighted in this theme. Key themes and sub-themes are listed in Table 3. This key theme of the participants' thinking about watching mukbang in their daily lives was discussed in two sub-themes: problems and reflections on daily life. Four of the participants stated that they thought of mukbang videos even when they were not watching mukbang videos. One of the participants explained that even if she was in a serious conversation with someone, she could not focus on the conversation and continued to think about the mukbang videos she watched:

“If I’m doing something like I’m thinking of, maybe I usually do a schedule on when I will watch the mukbang videos. So, I’m like when I’m doing something, especially if the time is close for me to watch them, the mukbang video, I cannot focus. I’m only thinking about it. And yes, it could be. Someone could be talking to you, speaking to you about serious or something...all you are thinking about is the mukbang video that you watched. Every sound, every gesture that they were doing is like replaying in your mind, replaying in your mind” (P2, F21).

Table 10. 2. Key themes

Theme number	Theme	Theme description	Theme results
1	Preoccupation	Preoccupation with mukbang watching	Participants, when they are not watching mukbang, spend time thinking about the previously watched mukbang videos and anticipating what the content of next video will be.
2	Withdrawal	Adverse health symptoms as a result of not being able to watch mukbang	Participants feel anger frustration, sadness, stress, and anxiety when they are unable to watch mukbang.
3	Tolerance	Elevated amount of time spent on watching mukbang to feel satisfied	Participants spend more and more time on watching mukbang in order to feel that they watched enough.
4	Inability to stop	Failed attempts to quit/reduce mukbang watching	Participants cannot fully stop watching mukbang even if they try to quit. Even when they attempt to reduce the daily time spent on watching mukbang they fail.
5	Loss of interest	Quitting previous hobbies due to mukbang watching urges	Participants have lost interest in engaging in their hobbies including reading, watching movies, going outside because of their desire to watch more mukbang.
6	Continuing despite problems	Resuming mukbang watching despite having problems	Participants keep watching mukbang even though they experience work/education/relationship/sleep problems because of excessive mukbang watching.
7	Deceiving family/friends	Lying about and/or hiding mukbang watching behaviour	Participants have to lie to their loved ones in order to hide how much time they spent on watching mukbang.
8	Relieving negative mood	Using mukbang watching for positive mood modification	Watching mukbang can transform negative feelings into positive ones for some of the participants.
9	Risking relationships	Using mukbang watching for positive mood modification	Watching mukbang can transform negative feelings into positive ones for some of the participants.

One of the participants stated that she planned to repeat what she watched in mukbang videos while shopping for food or eating at home:

“Mostly when I go maybe to a restaurant or one of these fast food outlets and then I buy the food and while I’m eating it...when I go to, for example, go and purchase food at a supermarket and then when I get home, I actually want to start repeating what the guys in the mukbang videos do” (P8, F27).

One of the six components of behavioural addictions, salience is also seen in AMW behaviour (Griffiths, 2005). As seen in behavioural addictions, individuals consider watching mukbang when they are not watching mukbang, and their minds are somehow preoccupied with mukbang. Individuals who are busy with activities such as planning the time to watch the next mukbang, dreaming and re-enacting in their minds may face various problems in their daily lives. Salience and preoccupation are also very common among other technology-related behavioural addictions (Islam et al., 2020; Van den Eijnden et al., 2016).

Key theme 2 – Withdrawal

In the Withdrawal key theme, what the participants thought and how they felt when they could not watch mukbang were discussed. Sub-themes of the Withdrawal key theme are presented in Table 3. Within this key theme, emotions and what they felt from the past to the future are divided into two sub-themes. When the general views of the eight participants were examined, that they felt anxiety, anger, sadness, frustration, disappointment, longing, and envy when they could not watch mukbang. One of the participants stated that he got angry when he could not watch mukbang because he thought he should watch mukbang:

“When I haven’t watched it, if, for instance, I’m too busy to watch it, then I feel angry, I feel frustrated, I feel some sort of anxiety because I want to watch it. It’s something that I feel like I have to do...Yes, I must watch it. If I don’t watch it, then I won’t be all right. I won’t be okay” (P1, M26)

One of the participants explained that she missed the times she watched the videos, because she could not watch mukbang videos while traveling, and she was envious of the times she could watch mukbang:

“Especially when I’m traveling. It’s difficult for me to watch mukbang and in most cases I think my job wants me to be traveling from time to time. So, I cannot really have much time to watch it so I envy and say I wish I was” (P4, F27).

According to the opinions of five participants, not being able to watch mukbang caused completely negative emotions. However, it is also seen that the reason why two participants wanted to watch mukbang was to get rid of negative emotions. In this respect, they were negatively affected in different ways when they could not watch the videos due to reasons such as being busy with other jobs and having access problems. When behavioural and chemical addictions were examined, withdrawal symptoms were similar to those experienced when they took a break and tried to quit. This supported the view that addictive mukbang viewing is similar to behavioural addictions in terms of physical and emotional withdrawal symptoms, and leads to similar results.

Key theme 3 – Tolerance

In this key theme, the opinions of the participants about how long they watched mukbang were included. The sub-themes within the Tolerance key theme are presented in Table 3. Within the key theme of Tolerance, the opinions of the participants on why they developed tolerance are divided into two sub-themes: time and content. All of the participants stated that when they started watching mukbang, they watched less and the time they watched mukbang had gradually increased. Two participants thought that the increase in the amount of time they watched mukbang was related to the increasing content density over time. The diversification

and increase of watching mukbang videos, which are mostly watched on *YouTube*, seems to have attracted more attention of the audience.

Similarly, one of the participants stated that she enjoyed watching mukbang videos that included different foods or different eating styles (P8). Naturally, she watched mukbang more than before because the transition from one video to another video was more exciting and interesting in this discovery process:

“If I could, I would actually watch it for more hours than I usually watch it for. If it was possible, I actually want to watch it for a longer period...Definitely increased [time]. Way back there were not a lot of mukbang users. So, now that there’s different kind ones and there’s different cultures involved, people exploring different foods and the way they cook it, I watch it way more. Back then I used to watch it less than that because there wasn’t much to see. People were not really exploring with different kinds of food and most of them eat crazy things these days...back then in the days they never used to eat crazy, they used to eat the normal food that we usually eat. So, now it’s more interesting because people are willing to explore anything” (P8, F27).

One of the participants stated that when he watched short mukbang videos, he watched them over and over again to fill the time and get satisfaction (P1). In this context, it appears that the participant actually started with shorter videos at first and realized that he became addicted by observing that the time he watched increased over time.

“If I watch shorter videos, I have to watch multiple of them to actually try and fill in all the time that I actually usually watch it. So, if I watch a shorter video, I have to watch multiple of them to cover up all that time. So, I have to watch it for longer periods of time...when I had first started, I wouldn’t say I was addicted immediately. It took time, then gradually overtime. But now I watch it way more than I used to watch it back when I had just started. So now I watch it more than I used to...In order to feel satisfied” (P1, M26).

How mukbang viewers develop tolerance over time is analysed within two different headings. First of all, with the pleasure and satisfaction it provides, watching mukbang became addictive over time, rather than being an activity that was only used for leisure time. Four participants

stated that it took up much more of their time (over an extended period) than it did at first. When the course of similar addictive behaviours is examined, others have emphasized that such behaviour first started for leisure purposes but turned into addictive behaviour (Király et al. 2015; Kircaburun et al. 2020; Kor et al. 2014). There are various social gratifications that underlie the AMW. With the diversification of mukbang content, participants are interested in (and curious about) different foods and different ways of eating. In parallel with these findings, one of the social motivations of watching mukbang is to have information about new food dishes (Anjani, et al., 2020; Kircaburun et al., 2022b).

Key theme 4 – Inability to stop

This key theme was based on the participants' views on why they could not stop watching mukbang. The sub-themes within the Inability to stop key theme are presented in Table 3. Within the key theme of inability to stop, there were two sub-themes: participants' behaviours and feelings towards stopping watching mukbang. All of the participants explained that they tried to stop or reduce watching mukbang, but they were not successful. One of the participants stated that she was stressed because she watched too much mukbang and that she spent the time she spent more time watching mukbang than on her university lessons and homework. Despite all these feelings, she tried to stop watching mukbang, but she said that she started watching mukbang again the next day (P2). Similarly, another participant stated that he once did not watch mukbang for the whole day but started watching it again at night:

“It’s hard to quit mukbang videos, because in 2020, I was stressing that I’m taking up time, the time that I’m supposed to use it studying. I’m taking it so much time watching those videos I could be watching. I could be doing my homework, so it gets stressful, and I like I could try to quit for a day, but I’m not able to, like quit for a day, but the following day, obviously I will just go back to them, so it’s very hard to quit them” (P2, F21).

“There was a time when I tried and I didn’t watch mukbang for the whole day. And then during the night, I started watching” (P7, F24).

A participant who stated that he always tended to watch more mukbangs also said he did not even realise this while watching mukbangs and did not understand how the time passed (P6). One participant who took a break from watching mukbang while preparing for exams stated that when she took a small break, she constantly came across mukbang videos on *YouTube*, and after watching one, she could not stop herself from watching another one:

“I tried to stop when I studied with my examinations, but then the time when I wanted to maybe browsing something, I go to YouTube and then the details of mukbang keeps on popping. So, I will be like, OK, let me just take a few minutes to watch this video and I will go back. So, I tried, but then I couldn’t... I tried but it didn’t work because the video just keeps on popping, and then I would give up to this one, after the other one comes and another one. So, you just continue watching and watching” (P7, F24).

It was also found that individuals found it difficult to quit and reduce their mukbang watching, but they thought that they could not quit and experienced negative emotions when they tried to quit. However, the situation was not limited to this. It was also found that three participants experienced relapse by starting to watch mukbang again. They lost control over their behaviour, continued to watch unconsciously, and had difficulty in resisting their urges.

Key theme 5 – Loss of interest

The key theme of loss of interest occurred in situations where participants lost interest in other hobbies because they watched mukbang. The sub-themes within this key theme are presented in Table 3. The participants’ experiences within this key theme comprised two sub-themes: control and change. While three of the participants thought that they made an uncontrolled choice between watching mukbang or doing something else, three of them thought that these choices were conscious. One of the participants stated that watching mukbang was not something that could be controlled and that he watched mukbang instead of socialising with his friends (P1).

“You know with addiction it is not something that you can control, even me. Now I would say I spend more time watching mukbang than socializing with friends... Because with the

little time that I have, I'd rather watch mukbang than go outside, for instance, visit a friend" (P1, M26).

Another point emphasised was the changing and decreasing interests. One of the participants stated that she used to like writing and used to write when she took a break from studying, but now she only watched mukbang instead of writing. She also stated that she no longer did the things she liked to do:

"I could take breaks when I'm studying. I used to write because I love writing. I used to write. But now the breaks that I take, I take to only watch mukbang. So, I think I'm no longer participate in things that I like" (P2, F21).

When looking at the effect of watching mukbang on habits and hobbies, five participants generally did not show interest in many things that they used to be interested in. They replaced their behaviours and hobbies that they used to enjoy with watching mukbang. It is interesting that only one of the participants expressed that watching mukbang instead of engaging in other activities was a conscious choice whereas four participants stated that they continued watching mukbang uncontrollably. Loss of control was reported to be present in other online behavioural addictions including problematic TV series watching (Flayelle et al., 2017).

Key theme 6 – Continuing despite problems

Continuing despite problems was based on the problems that the participants faced due to watching mukbang. The sub-themes within this key theme are shown in Table 3. In this key theme, various problems encountered by the participants due to watching mukbang comprised two themes. The first sub-theme was health-related problems and the second sub-theme was problems related to their tasks. Five of the participants emphasised that they had problems with sleep. One of the participants stated that he watched mukbang when he should be sleeping, so he felt tired when he went to work and had trouble focusing:

“For instance, it affects my work a lot because I find that when I have to rest, I’m watching mukbang videos. So, now when I get at work, I’m exhausted, I’m tired, I can’t really focus. I can’t put in that full attention to my work because of watching mukbang videos... during the day I’m at work. So, now I watch mukbang late at night and then I can’t get enough sleep” (P1, M26).

One participant stated that she neglected her education-related tasks, and fell behind because she ignored what she had to do and as a result, she felt sad and disappointed:

“One of the things that have affected me the most is neglecting the duties that I have to do like homework, obviously. So, I always fall behind in homework. I do not finish up the homework that I’m supposed to do. And it gets stressful because I’m in university, so there’s a lot of work that is going on. So, I think it upsets me because I get frustrated and I’m not able to perform the way I should be performing in my academics, so it’s like it really does affect me, especially when it comes to my academics and having to do the things that are important” (P2, F21).

Five participants had problems with their health, especially sleep, due to watching mukbang, and that these problems caused other problems in their occupational and educational lives because they ignored their responsibilities in college/university, work, and daily life. Similar to the symptoms of other technology-related behavioural addictions, individuals continued to watch mukbang despite the problems they experienced. In another study conducted using the components model of behavioural addiction, it was found that the majority of participants experienced a small number of problems in their lives due to watching mukbang (Kircaburun et al., 2020). However, in the present study, over half of the participants (n=5) indicated continuing mukbang watching despite problems. The differing results between the present study and the aforementioned previous study may be due to the fact that the previous study was conducted including low and high-risk groups of AMW. The participants of the present study were all a high-risk mukbang viewers. Therefore, when watching mukbang becomes addictive, it starts to cause problems in the daily and professional lives of individuals.

Key theme 7 – Deceiving family/friends

This key theme involved participants' views on lying to their family and friends about watching mukbang. The sub-themes within the Deceiving family/friends key theme are shown in Table 3. This key theme comprised two themes: reasons and coping strategies. The participants explained in various ways why they deceived their family and friends and the ways in which they did it. In general, all of the participants were in some way dishonest with their friends about watching mukbang. One participant explained that she lied to her family about watching mukbang because they did not understand the content of mukbang and watching mukbang seemed funny and meaningless (P7):

"I lied to my family because ... according to one of my family members, they said it was funny watching mukbang. So, for them, it doesn't make sense. Someone watching mukbang. They don't get the content. So, I would lie that I am watching maybe some channel or whatever not mukbang" (P7, F24 years).

Three participants preferred to hide and secretly watch mukbang instead of lying or telling their family or friends that they watched mukbang (P4):

"If I'm around my family, I'm even sure that I think my mom thinks that I just don't watch mukbang. I don't think she knows that I do watch mukbang... they even questioned me to say, okay, what are you watching anyway? I just hide it but not lie about it" (P4, F27).

One of the things that participants hid from others was how long or how many videos they had watched. One participant tended to hide the number of videos he watched by showing much less than the real number (P6):

"I do tend to hide how much videos I watch. I just normally say, oh, I just watched one or two videos knowing well I watched over 50 to 60 more videos on different periods of food they ate" (P6, M25).

It was observed that individuals gave false information about their mukbang watching to their family and friends and avoid revealing the truth. This is one of the components of behavioural addictions (Griffiths, 2005). Lying about what they watch or play, hiding how much time they

spend, making various excuses or claiming that it is not a problem are common symptoms of technology-related behavioural addictions (Kircaburun et al., 2021).

Key theme 8 – Relieving negative mood

In the theme of Relieving negative mood, the views of the participants on how and which negative thoughts they got rid of by watching mukbang were identified. The key theme of Relieving negative mood comprised two themes involving the thoughts and feelings of the participants before and after watching mukbang. The themes within this key theme are shown in Table 3. Individuals who had negative thoughts and feelings before watching mukbang expressed that they felt better after watching mukbang. One of the participants stated that when she is sad, she watched mukbang to get rid of the sadness (P4):

“Especially when I’m sad it washes away my sadness. I’ll have something to focus on, definitely” (P4, F27).

Watching mukbang, especially when she go through intense periods, helped her to overcome her troubles easily (P7). At the end of a stressful day, one participant could spend the rest of the day watching mukbang to escape from the world or problems and relieve stress (P5):

“I was in a distressing way. When I was busy with my exams, so after a hectic exam, I will just watch mukbang to relieve distress. To relieve anxiety that panic attacks that I had during the exams and then I’ll be fine” (P7, F24).

“Coming home from a stressful day at work and being able to escape and immerse myself into the world... [my] job is at risk in that same scenario. Those days, I think I watched mukbang. I think for the rest of the day. Yeah, I think it does help when it comes to stress issues, especially on my end, it does” (P5, M33).

According to six participants, watching mukbang was a way to get rid of their negative feelings and thoughts. AMW has been defined as a maladaptive coping strategy that individuals use to overcome negative emotions such as loneliness and depression (Kircaburun et al., 2021). However, it is also seen that one of the participants was aware that this coping mechanism was not always functional. Research has found that eating and drinking sounds provide a kind of

happiness and relaxation to various mukbang audiences (Woo, 2018). Previous research has found that individuals who feel bored and stressed watch mukbang to escape from this reality (Bruno & Chang, 2017). Similarly, individuals turn to activities such as gambling, gaming and pornography in order to escape from reality and negative feelings and thoughts, and transform them into addictive behaviours with the positive changes they experience (Király et al. 2015; Kor et al. 2014; Wood & Griffiths 2007). Similarly, watching mukbang can turn into an addictive behaviour due to the positive change it creates.

Key theme 9 – Risking relationships

This theme was based on participants' views on how they risked their relationships by watching mukbang. Within the Risking Relationships key theme, the opinions of the participants comprised two sub-themes: friendship and family relationships. The themes in this key theme are shown in Table 3. One of the participants stated that their friendship relationships weakened with watching mukbang and came to the point of rupture and that his friends could no longer maintain their friendship and gave up. Apart from this, the remaining friends did not continue to talk. Therefore, he thought that he had completely lost his friends (P1):

“I’ve lost some of my friends, Actually, they just gave up. So, I’ve lost some of my friends because of this because they can’t keep up with this...Not all of them. Some of them I still have them, but some they actually stopped talking to me. I lost them. They are not really my friends anymore because of this” (P1, M26).

One participant who thought that the ties with her family had weakened stated that she no longer participated in the family activities she used to participate in and that she did not spend as much time with her family as before. This situation made her family angry and caused them to think that there were other problems underlying this problem (P8):

“There was a TV show that we used to watch as a family and then if they call me to come and watch it with them, I end up not going to watch it because I’m actually enjoying watching what I’m watching at that moment. So, I end up not participating in family time and family activities. And then, for example, if they’re going out because I’m enjoying what I’m doing, I just end up staying at home and continue doing what I’m doing...they end up

being a bit angry and frustrated with me. And sometimes it really turns into a conflict because they think that I don't want to be part of the family, I don't want to engage and I don't want to spend the time that we used to spend. So, they end up thinking that there's issues underlying issues than what I'm showing” (P8, F27).

Individuals' relationships with their families and friends weakened due to their prioritisation of watching mukbang. They ignored their relationships for the sake of watching mukbang, and they were sometimes insensitive to the requests and needs of their family and friends. While this situation usually led to the end of their friendship relationships or to the point of rupture, it sometimes caused different problems with their families. More specifically, it is parallel with the symptoms of other behavioural addictions (Griffiths, 2005).

Table 10. 3. Summary of key themes and sub-themes

Key theme	Sub-themes
Preoccupation	Problems Reflections on daily life
Withdrawal	Feelings From past to future
Tolerance	Time-related Content-related
Inability to stop	Feelings Behaviours
Loss of interest	Control Change
Continuing despite problems	Health-related problems Task-related problems
Deceiving family/friends	Reasons Coping strategies
Relieving negative mood	Before After
Risking relationships	Friends Family

10.4 General discussion

Although the literature focuses on addictive activities such as social media addiction, online gaming addiction, and online sex addiction, there is little research on the addictive effect of watching mukbang (Kircaburan et al., 2020). Therefore, the present study provides a novel contribution to the literature with its in-depth examination of addictive mukbang watching. The present study adapted the criteria of behavioural addiction symptoms to investigate AMW by using a qualitative research design. Mukbang watching addiction has been found to be positively associated with internet addiction (Kircaburun et al., 2021). Ryan et al. (2016) adapted the negative consequences of internet addiction (e.g., loss of control, mood changes, withdrawal symptoms, and excessive use) in their study to examine Facebook addiction. In the present study, preoccupation, withdrawal, tolerance, inability to stop, loss of interest, continuing despite problems, deceiving family/friends, relieving negative mood, risking relationship symptoms of gaming disorder were used as content-directed key themes. The data analysis in the present study suggested that all of the components of behavioural addiction criteria (APA, 2013; Griffiths, 2005) were demonstrated in the participants' mukbang watching behaviour.

Preoccupation was one of the key themes in the present study. Similar findings were obtained in a study on *YouTube* watching addiction. Klobas et al. (2018) found that the participants with *YouTube* watching addiction talk about *YouTube* as an important activity in that it dominates their lives, that they cannot quit even though it harms their lives, and that they cannot limit their use. In the present study, the participants placed watching mukbang at the centre of their lives. They stated that they were constantly watching mukbang, starting a chat about mukbang, and even while shopping, thinking about the food they watched in the mukbang shows, what will happen before the episodes are aired, and what will be aired in the next show. In this sense, the findings show similarities with the study of Klobas et al. (2018). Furthermore,

preoccupation was one of the addictive *YouTube* use symptoms that distinguished addicted *YouTube* users from compulsive *YouTube* users in a qualitative interview study (Klobas et al., 2019). Consequently, preoccupation may be seen as an important symptom of different behavioural addictions that also appears to be present among addictive mukbang viewers. Moreover, Ryan et al. (2016) examined *Facebook* addiction using qualitative interviews and found that ‘checking for new content’ was the strongest sub-theme in preoccupation. In the present study, all participants stated that they were always thinking about the mukbang shows and waiting for the new content impatiently. In this regard both studies show similarities.

The second theme examined in the present study was withdrawal. The findings showed that not being able to watch mukbang caused participants to experience anxiety, get angry, and be unhappy and stressed. The results concur with the extant literature on technology-related behavioural addictions that showed addictive online behaviours and problematic binge-watching were commonly associated with negative feelings associated with withdrawal symptoms including depression, anger, and anxiety (Flisher, 2010; Starosta et al., 2021). The findings are also similar to the criteria of Young (1996) developed for diagnosing internet addiction, wanting to spend more time in front of the computer, and experiencing anxiety and depression when trying to reduce the time spent in front of the computer. The findings also concur with previous scale-development studies reporting withdrawal symptom as one of the important components of problematic TV series watching and AMW (Kircaburun et al., 2021b; Orosz et al., 2016).

Tolerance was another key theme of the present study. Participants watched mukbang more and more over time and the time they spent watching mukbang had gradually increased. This is consistent with the findings of the study from Klobas et al. (2018) who reported that problematic *YouTube* users had lack of self-regulation over their *YouTube* watching behaviour, and watched *YouTube* at every opportunity. Findings of the present study suggested that

participants watched mukbang excessively. Sometimes they watched a lot of different mukbang videos to feel satisfied. The findings of the present study also concur with the extant literature that indicated that the need to watch more videos to feel satisfied and having urges to watching videos all the time were important predictors of problematic binge-watching (Flayelle et al., 2019; Forte et al., 2021).

Participants also indicated that they were struggling to stop watching mukbang. Even though three of the participants tried to stop, they started watching mukbang again. The findings of the present study concur with the existing studies on other technology-related behavioural addictions that reported some of the users were struggling to stop engaging in addictive online behaviours (see Griffiths et al., 2012 for a review). For instance, different studies on binge-watching behaviour have identified loss of control and relapse as some of the important indicators of problematic binge-watching behaviour (Flayelle et al., 2019; Orosz et al., 2016). The symptom of inability to stop watching videos was also present among some of the addictive *YouTube* users (Balakrishnan & Griffiths, 2017). Moreover, in a qualitative interview study with Chinese young adults, continuing to watch online videos despite experiencing negative feelings (e.g., anxiety, regret) was among the symptoms of addictive online video watching (Yang et al., 2021). Failed attempts to stop watching mukbang seems to be one of the symptoms of behavioural addiction that may indicate loss of control over the behaviour.

One of the key themes was loss of interest which refers to losing interest on hobbies and other activities due to excessive engagement on mukbang watching. This is in line with some previous studies that indicated loss of interest on other activities due to other addictive online behaviours. For instance, a cross-sectional study identified that some of the participants neglected household chores to spend more time on watching television series (Forte et al., 2021). The literature also identified loss of interest on engaging in social activities due to the urge for more binge-watching TV series (Flayelle et al., 2019). Similarly, the present study

also found that a number of participants lost interest in meeting with their friends outside and preferred watching mukbang instead. Six of the participants in the present study indicated that they lost interest in working on their hobbies and educational tasks. This also concurs with the previous studies on online behavioural addictions reporting individuals' decreased loss of interest on working on their educational and daily tasks due to addictive social media use (Vilca & Vallejos, 2015).

Participants indicated that they kept watching mukbang excessively even though they experienced problems. Continuing despite problems is another symptom of addiction. The findings of the present study found that AMW appeared to cause participants to have sleeping problems that resulted in lower performance at work or other daily routines. In the literature regarding addictive use of social media, gaming, and online video watching, findings mostly show that despite the negative consequences, individuals still continue with their addictive behaviour resulting in sleeping problems which consequently leads to decreased performance at work or other daily routines (Griffiths et al., 2012; Lopez-Fernandez et al., 2022; Ryan et al., 2016). Another qualitative interview study reported that viewers kept watching online videos despite having adverse physical consequences including blurry vision and neck injury (Yang et al., 2021). Consequently, the present study's findings concur with the existing studies that reported continuing despite problems as another behavioural addiction symptom.

Six of the participants indicated that they deceived their families and/or friends about how much time they spent watching mukbang. This finding concurs with the existing studies in the literature where some of the users addicted to the internet hid the extent of their internet use from family and friends (Young, 1996). According to a literature review, deceiving family members and therapist about the amount of time spent on internet is a criterion for diagnosing internet addiction (Medenica et al., 2015). In a scale development study, it was found that deception of family/friends was one of the important symptoms of social media disorder (Van

den Eijnden et al., 2016). It appears that individuals with the risk of becoming addicted to particular online activities and internet in general tend to lie and/or hide how much they spend time on internet or the particular activities. Consequently, the present study indicates deception is also a symptom of AMW as well.

Relieving negative mood through watching mukbang was another symptom of addictive mukbang watching. Most of the participants used excessive mukbang watching for positive mood modification. Previous studies on behavioural addictions have shown that addictive technology use helped participants to obtain secondary benefits, including coping with negative emotions and thoughts (Lopez-Fernandez et al., 2022), as well as escaping from unpleasant feelings (Ort et al., 2021). Some studies argued that viewers use mukbang to escape from the unpleasant reality of their life by interacting with others worldwide (Jenging et al., 2023). A scale development and validation study with emerging adults also indicated that positive mood modification was the most prevalent symptom of problematic series watching reported by participants (Fino et al., 2022). The findings of the present study concur with the existing literature on other technology-related behavioural addictions and mukbang specifically (Fino et al., 2022; Jenging et al., 2023; Kircaburun et al., 2021b).

Two of the participants noted that they risked their relationships with families and/or friends due to addictive mukbang watching. This finding is in line with the extant literature suggesting that addictive online behaviours may lead to risking relationships with one's close circle. For instance, a study that investigated addictive use of *YouTube* reported participants' *YouTube* addiction affected their relationships with members of their family and led to losing their friends (Klobas et al., 2018, 2019). Negative social consequences were other symptoms of excessive binge-watching behaviours (Starosta et al., 2019). Furthermore, addictive use of internet has caused individuals to have marital problems and lose family and friends (Flisher, 2010; Young, 1996). Another study on smartphone addiction indicated that excessive

smartphone use disrupted participants' work and family/ friendly gatherings (Li & Lin, 2019). Addictive Facebook use is another technology-related behavioural addiction that has led to having problems with engagement in social situations (Ryan et al., 2016).

10.5 Limitations

The present study is not without limitations. First, the data comprised self-report data. This is susceptible to well-known biases. Second, the participants only came from three countries and three-quarters of the participants were from South Africa. Future studies should include participants from different nationalities. Third, the age range of the participants was limited. Future studies should use study groups from different age groups. The interviews were continued until data saturation was reached, meaning that no new findings were added.

10.6 Conclusion

The present study is the first to investigate AMW using an in-depth qualitative methodology. It appears that gaming disorder had symptoms and consequences that were applicable to addictive mukbang watching. Although, there is an argument that suggests that all behaviours should be examined by investigating specific properties instead of using common symptomology (Flayelle et al., 2017), the present study supported the notion that all addictive online behaviours share common symptoms and signs that comprise addiction (Griffiths, 2005).

The present results suggest that mukbang watching could be another online activity that may transform into technology-related behavioural addiction for a minority of viewers. Furthermore, some mukbang viewers may experience addiction-like symptoms that have impairments to their mental, physical, and psychosocial health. The present results provide important empirical evidence that watching mukbang may result in adverse health consequences and should be taken into consideration by health professionals and clinicians.

More studies are needed to investigate the correlates, prevalence, and factors that may lead to or be affected by AMW in order to obtain better understanding of this problematic online behaviour. Future studies should focus on replicating the present results using different research methods (e.g., large-scale surveys, longitudinal designs) and more diversified study groups from different age groups and sociodemographic features. Furthermore, studies that examine the mediating and moderating factors that may exacerbate or diminish AMW are also needed.

CHAPTER 11: General Discussion

Over the last two decades, research has shown that frequent or recreational use of online platforms/applications can lead to addictive behaviour among some individuals, with potential negative consequences for their mental and physical wellbeing (Király et al., 2014). However, most studies in the technology-related behavioural addiction literature have focused on general internet addiction, online gaming addiction, social media addiction, online shopping addiction, online gambling addiction, and online pornography addiction (Brand et al., 2016, 2019; Montag et al., 2015; Sindermann et al., 2018). Additionally, experts have recognized that pathological eating behaviours, such as binge eating, anorexia nervosa, bulimia nervosa, and food addiction, can lead to severe health problems, such as mental health issues, decreased quality of life, and obesity-related deaths (Galmiche et al., 2019; Kostro et al., 2014). The primary objective of this thesis was to examine the psychology of mukbang watching, including addictive symptoms associated with it, as well as assess addictive mukbang watching (AMW) and explore its motivational, individual difference, psychosocial, and eating-related correlates. This thesis makes unique contributions to the current knowledge on technology-related behavioural addictions given that mukbang watching is considered a new phenomenon and there are few studies that have investigated it.

Firstly, several assessment tools were developed and validated to assess AMW and mukbang watching motivations. This is significant because existing literature lacked assessment tools specifically designed for examining AMW and motives driving mukbang watching. The scales developed to assess AMW were based on the widely used criteria of behavioural addiction. These assessment tools also facilitated the investigation of motivational predictors of AMW (Chapter 4 and 5). Secondly, this thesis examined the psychological and emotional factors that may exacerbate AMW, including the correlational associations of AMW with depression,

loneliness, emotional dysregulation, anxiety, stress, psychological distress, and impulsivity (Chapter 6 and 7). These investigations were conducted for the first time in the context of this thesis. Furthermore, the thesis explored individual difference predictors of AMW, including personality traits and procrastination (Chapter 9). Another important contribution of this thesis is the examination of the associations between AMW with other technology-related behavioural addictions and disordered eating. Specifically, the correlational associations of AMW with disordered eating and addictive use of *YouTube* and the internet were explored (Chapter 6 and 8). This adds to the existing literature and enhances our understanding of the overlapping constructs with AMW. Thirdly, this thesis is the first to conduct a qualitative study with mukbang watchers, and explore if the criteria of addiction were present in their behaviour (Chapter 10). Prior to this thesis, to the best of the author's knowledge, no research had been conducted on AMW using any type of qualitative design. However, it should be noted that qualitative study was conducted to validate the quantitative findings and it is not considered more reliable than survey responses and is not typically used to confirm survey responses. Consequently, this thesis examined the potential addictive nature of mukbang watching and explored possible risk factors associated with it, drawing on the components model of behavioural addiction (Griffiths, 2005), the compensatory internet use model (CIUM; Kardefelt-Winther, 2014), and the Interaction of Person-Affect-Cognition-Execution model (I-PACE; Brand et al., 2016, 2019).

Chapter 2 comprised a scoping review to examine the existing literature on mukbang, with the specific aims of understanding the psychological characteristics of mukbang viewers and the psychological consequences of mukbang watching. The review involved searching multiple databases including *Academic Search Elite*, *Google Scholar*, *PsychArticles*, *PsychInfo*, *Science Direct*, and *Scopus*, as well as national UK newspapers. A total of 11 academic outputs from various disciplinary fields, primarily peer-reviewed papers, and 20 articles from national UK

newspapers were identified as relevant sources. The results of the review found that individuals watch mukbang for various reasons and motivations, such as social, sexual, entertainment, vicarious eating, and escape motives. Moreover, mukbang was found to be used as a coping mechanism to deal with negative mental and mood states, such as loneliness, boredom, and stress. However, the review also highlighted potential negative consequences of mukbang watching, including adverse alterations on food preferences, eating habits, table manners, promotion of disordered eating, and potential addictive use. These findings served as a foundation for the subsequent empirical investigations in the rest of the thesis.

Chapter 4 presents the first empirical chapter of this thesis, which aimed to develop and validate an assessment tool for AMW. The Mukbang Addiction Scale (MAS) was developed and validated based on the components model of behavioural addiction (Griffiths, 2005), using a pilot study with a small group of university students from Turkey ($N=236$). The MAS consisted of six items with each one mapping onto one of the six components (i.e., salience, mood modification, tolerance, withdrawal, conflict, and relapse). Construct validity, criterion validity, and reliability analyses indicated that MAS had strong psychometric properties. The strong psychometric properties of the MAS, as indicated by the construct validity, criterion validity, and reliability analyses, enhance confidence in the accuracy and consistency of the scale's measurement. This allows researchers to confidently use the MAS in future studies, promoting the comparability and generalizability of findings related to AMW. The use of the components model of behavioural addiction (Griffiths, 2005) as the theoretical framework for developing the MAS strengthens the conceptual understanding of AMW. By mapping the MAS items onto the six components of addiction, the study highlights the relevance and applicability of this model to AMW, suggesting that it shares similarities with other behavioural addictions. Consequently, the findings of Chapter 4 provide important cross-sectional evidence suggesting

that mukbang watching may be another online behaviour that has the potential to transform into an addictive behaviour.

Chapter 5 developed and validated assessment tools for assessing AMW and mukbang watching motivations. An online survey, using a crowdsourcing platform (i.e. *Prolific.co*), was administered to 604 adults who were mukbang watchers. The majority of the participants were Caucasian, followed by Black/African, Hispanic/Latino, and Asian respectively from highest to lowest. The psychometric properties of PMWS and MWMS were examined, and construct validity and convergent validity analyses were conducted. PMWS was found to consist of three factors (i.e., denial, compulsion, and loss of control), while MWMS comprised six factors (i.e., entertainment, sexual reasons, compensation, discovery, groupie reasons, and escape). Furthermore, the association between mukbang watching motivations and AMW was investigated using hierarchical regression analysis to assess convergent validity. The findings showed that escape, sexual, and eating compensation motives were the main motivations associated with higher levels of AMW. Therefore, Chapter 5 identified motivational risk factors for AMW through the development and validation of assessment tools.

In summary, Chapter 4 and 5 developed different psychometric tools for assessing AMW in different study groups. The MAS in Chapter 4 utilised criteria from the components model of addiction (Griffiths, 2005), while the items of PMWS in Chapter 5 were adapted from the Binge-Watching Engagement and Symptoms Questionnaire (BWESQ; Flayelle et al., 2019) and Social Media Disorder Scale (SMDS; Van den Eijnden et al., 2016). Despite the strong correlation between MAS and PMWS in Chapter 5, each scale offers distinct assessment criteria, making valuable contributions to the literature. It is worth mentioning that the development of MAS involved a limited number of participants from a single country. As a result, there was a need to enhance the study's scope and inclusivity, leading to creation of PMWS using a larger and more diverse group of participants. Given the limited availability of

assessment tools for AMW in existing literature, both scales are expected to be widely used in future studies. Furthermore, replicating the findings of Chapter 4 with a larger sample and using different criteria in Chapter 5 provided robust confirmatory evidence for the existence of AMW. Therefore, after developing psychometric scales (Chapter 4 and 5), exploring potential correlates of AMW was considered crucial for a better understanding of its underlying nature.

The remaining cross-sectional studies (Chapter 6, 7, 8, and 9) examined the psychological, emotional, and individual difference factors associated with AMW. Drawing on the theoretical frameworks of the I-PACE model and CIUM (Brand et al., 2016, 2019; Kardefelt-Winther, 2014), various established risk factors that have been linked to other behavioural addictions were tested for their associations with AMW. Additionally, the overlap between AMW and other behavioural addictions was explored to establish that AMW is a distinct construct that shares common variance with potentially overlapping behavioural addictions. In Chapter 6, the objective was to investigate the relationship between depression, loneliness, and AMW, as well as the association between AMW and *YouTube* addiction. An online survey that comprised assessment tools for aforementioned variables was administered to 217 mukbang viewers from a Turkish university. Path analysis and mediation analysis were employed for this purpose. The results showed that loneliness, but not depression, was positively correlated with higher levels of AMW. Furthermore, both depression and AMW, but not loneliness, were associated with increased *YouTube* addiction. The findings indicated that while individuals who felt lonely attempted to cope with their loneliness via engaging in AMW, depressed participants used excessive *YouTube* use as a maladaptive coping strategy to overcome their unpleasant mental and emotional state. These findings provided evidence in support of the assumptions of the I-PACE model, suggesting that AMW and *YouTube* addiction are overlapping but distinct constructs with common and unique psychosocial determinants, emphasising the importance of

joint examination of the aforementioned constructs in order to obtain knowledge concerning the nature of specific behavioural addictions.

Chapter 7 investigated the associations between emotional and psychological impairments and AMW. A total of 513 adults who watched mukbang in the past seven days completed an online survey, using a crowdsourcing platform (i.e., *Prolific.co*). The research employed path analysis and mediation analysis to examine the mediating role of impulsivity facets (i.e. negative urgency, positive urgency, sensation seeking, lack of premeditation, and lack of perseverance) and psychological distress (i.e. depression, anxiety, and stress) between difficulties in emotional regulation (ERD) and AMW. The findings of the study showed that ERD was directly and indirectly associated with higher levels of AMW via positive urgency and anxiety. Other facets and constructs (i.e., depression, stress, negative urgency, sensation seeking, lack of premeditation, and lack of perseverance) despite being positively correlated with AMW in the correlation analysis, were not significant in the model.

Building on the findings of Chapter 6, Chapter 7 highlighted that individuals who struggle with emotional regulation and experience anxiety are at greater risk of developing addictive patterns of mukbang watching as a coping mechanism for dealing with their problems. Mukbang videos may provide an escape for individuals who experience anxiety. Watching others eat large quantities of food may serve as a distraction from anxious thoughts and feelings. It can offer individuals a temporary reprieve from stress and worries, providing a sense of relief and comfort. Furthermore, positive urgency may also serve as a coping mechanism for individuals who experience emotional distress or difficulties in regulating their emotions. Mukbang videos can offer a distraction from negative emotions and/or provide a temporary mood boost, allowing individuals to escape or numb their emotional distress. This impulsive coping strategy may become addictive as individuals rely on mukbang watching as a maladaptive way to cope with their emotions, particularly for those high in positive urgency who are more prone to impulsive

behaviours. The findings obtained in Chapter 6 and 7 are consistent with wider research in other addictive online behaviours including social media addiction, online gaming addiction, and online pornography addiction (Kuss & Griffiths, 2012a; Sherlock & Wagstaff, 2018; Spenhoff et al., 2013).

When considering Chapters 6 and 7 collectively, significant factors that may contribute to higher AMW are presented. Each study utilised different assessment tools (MAS in Chapter 6 and PMWS in Chapter 7) and samples (a small group of Turkish university students in Chapter 6, and a more diverse group of adults from various age groups and countries in Chapter 7). Despite these differences, both studies found that when depression is considered alongside other emotional and mental issues, its impact on AMW becomes non-significant. Both studies found that loneliness, impulsivity, and anxiety, were more significant predictors of AMW, overshadowing the relationship between depression and AMW. It may be that individuals with depression employ different coping mechanisms compared to those with anxiety or other emotional difficulties. While mukbang watching may serve as a coping mechanism for individuals with anxiety or other emotional distress, it may not be as relevant or effective for those with depression. Individuals with depression may have different coping strategies or preferences, such as withdrawal, isolation, or other forms of distraction (e.g., other types of behavioural addictions), which may not involve engaging in AMW.

The findings from Chapter 2's review suggested that watching mukbang may have negative consequences on individuals' wellbeing. In the fifth empirical study (Chapter 8), the relationship between AMW, internet addiction, and disordered eating was examined. The study included 140 emerging adults from a Turkish university who had watched mukbang at least once in the past 30 days. Structural equation modelling was utilised to investigate the predictive role of AMW on internet addiction and disordered eating. The results from Chapter 8 showed that AMW was positively associated with both internet addiction and disordered eating,

indicating that it can exacerbate both of these behaviours. Mukbang videos are known to provide a rewarding experience to viewers, triggering the release of dopamine in the brain, which is associated with pleasure and reward (Pereira-Castro et al., 2022).

The pleasurable experience of watching others eat or the social connection derived from discussing or sharing videos with others can reinforce the behaviour and contribute to addictive patterns of internet use. Additionally, mukbang videos often depict large quantities of food being consumed in a visually appealing manner, creating a strong association between food and pleasure in the minds of viewers. This can trigger an obsession with food, leading to preoccupation with food-related thoughts, cravings, and an intensified focus on eating. Consequently, watching mukbang videos may distort viewers' perception of food and eating, leading to a skewed relationship with food. It is important to note that the model used in the study was based on theoretical assumptions, and the obtained results do not imply causality or the direction of associations. However, the findings from Chapter 8 highlight that AMW overlaps with, and is distinct from, internet addiction and disordered eating.

Previous studies have extensively demonstrated the significant role of individual difference factors in the development of addictive use of various online activities (Spada, 2014). Therefore, the final cross-sectional study (Chapter 9) of this thesis investigated the association between personality traits and procrastination with AMW. More specifically, the study examined the direct and indirect associations of Big Five personality traits (i.e., extroversion, neuroticism, agreeableness, openness, conscientiousness) and dark personality traits (i.e., narcissism, Machiavellianism, psychopathy, sadism, spitefulness) with AMW, mediated by procrastination. The study utilised an online survey completed by 222 Turkish university students who had watched mukbang at least once in the previous week, assessing the aforementioned variables. Path analysis and mediation analysis were employed to examine the relationships. The findings of this study showed that extroversion was indirectly negatively

associated with AMW via procrastination. Additionally, conscientiousness, sadism, and procrastination were directly positively associated with higher levels of AMW.

These findings, in line with the assumptions of the I-PACE model, underscored the importance of individual difference factors in the determination of AMW. Consistent with the findings of Chapters 2 and 6, which suggested higher engagement in AMW among lonely individuals, lower extroversion was found to be another indicator of higher AMW via procrastination. In the context of AMW, procrastination seems to play a mediating role between lower extroversion and the development and maintenance of addictive patterns. For instance, introverted individuals who tend to procrastinate may find themselves spending excessive time watching mukbang videos as a means to avoid or delay other tasks or responsibilities. Mukbang videos may serve as a form of distraction or escape from tasks that introverted individuals may find less appealing or more challenging, such as social interactions or work-related activities.

In the correlation analysis, conscientiousness did not show a significant association with AMW. However, in the model, conscientiousness was directly and positively associated with AMW. This discrepancy could potentially be explained by the presence of a suppressor variable that influenced the relationship between conscientiousness and AMW (Ludlow & Klein, 2014). On the other hand, all dark personality traits were moderately positively correlated with AMW, but only sadism was found to be significantly and directly associated with AMW in the model. This indicates that sadistic personality features had the strongest influence on AMW compared to other dark traits. Mukbang videos, which often depict individuals consuming large amounts of food on camera, may provide sensory stimulation, novelty, and excitement for some viewers. For individuals with sadistic tendencies, observing others indulging in excessive food consumption and potentially experiencing discomfort may trigger pleasurable or stimulating sensations. Consequently, Chapter 9 contributes valuable empirical insights to the literature on

behavioural addictions by reporting on the individual difference markers of AMW for the first time, drawing from the theoretical assumptions of the I-PACE model and CIUM.

Chapter 10 explored the addictive symptoms of mukbang watching using a qualitative design. The study collected data from a sample of eight frequent mukbang viewers using semi-structured interviews. Participants who scored high on AMW in the online survey that was used to collect data for Chapter 7 were contacted and asked whether they would be interested in participating an interview study. The data were analysed using directed content analysis, which explored nine key themes: preoccupation, withdrawal, tolerance, inability to stop, loss of interest, continuing despite problems, deceiving family and friends, relieving negative mood, and risking relationships. In total, 18 sub-themes were identified, with two sub-themes for each key theme. These sub-themes included problems and reflections on daily life for preoccupation, feelings and from past to future for withdrawal, time-related and content-related for tolerance, feelings and behaviours for inability to stop, control and change for loss of interest, health- and task-related problems for continuing despite problems, reasons and coping strategies for deceiving family and friends, before and after for relieving negative mood, and friends and family for risking relationships. The results, confirming the findings from cross-sectional studies, suggest that mukbang watching could potentially lead to technology-related behavioural addiction for a minority of viewers, and some mukbang viewers may experience addiction-like symptoms that negatively impact their mental, physical, and psychosocial health.

Taken together, findings from the empirical chapters indicate that addictive symptoms may actually be present among some mukbang viewers. There are several motivational, individual difference, emotional, and psychological determinants of AMW including watching mukbang for sexual, vicarious eating, and escapist motives, loneliness, emotion dysregulation, anxiety, impulsive traits (i.e. positive urgency), lower extroversion, sadism, and procrastination. Furthermore, AMW is a distinct addictive behaviour that overlaps with disordered eating and

other technology-related behavioural addictions including *YouTube* addiction and internet addiction. Overall, the empirical chapters provide valuable preliminary evidence that can serve as a guide for those seeking to understand the nature and underlying mechanisms of AMW.

Regular mukbang watching can have positive effects for some individuals, including providing entertainment, social connection, or sensory experiences. However, when mukbang watching becomes addictive as a coping mechanism for real-life problems, it can have detrimental impacts on an individual's well-being, mental health, and daily functioning. This may manifest in issues such as decreased physical activity, poor nutrition, social isolation, neglect of responsibilities, and disrupted sleep patterns. Additionally, AMW may contribute to the development or exacerbation of internet addiction, disordered eating, and other behavioural addictions. Overall, it is important to recognize that while moderate and occasional mukbang watching may not be harmful for most people, addictive patterns of mukbang watching can have adverse consequences and may require intervention or treatment.

11.1 Commentary on methodologies used

The present thesis adopted a mixed-methods approach, which involved combining quantitative investigations in Chapters 4, 5, 6, 7, 8, and 9 with qualitative exploration in Chapter 10. Quantitative and qualitative methods have distinct theoretical frameworks. Chapters 4 and 5 focused on the development and validation of three psychometric scales, including two scales for assessing AMW and one for mukbang watching motives. The other chapters investigated the associations and common factors related to AMW. Self-report surveys were utilised to gather data for the quantitative studies. They have advantages such as being able to reach a large and diverse sample of participants, being administered quickly and efficiently, allowing for anonymous participation, and facilitating the automatic storage and analysis of data (Couper, 2000).

However, self-report surveys have limitations, including non-representative samples due to self-selection bias, potential sampling bias from non-random selection, response bias from biased or inaccurate participant responses, technical issues such as internet connectivity affecting accuracy, and potential inaccessibility for individuals without technology access or familiarity (Gosling & Mason, 2015). Self-report surveys, despite their limitations, offer valuable insights by showing the inter-correlations between variables and providing an overall understanding of a particular phenomenon as was the case in the present thesis (Couper, 2000).

Several data-analytic methods were used to analyse the quantitative data including: exploratory factor analysis (EFA), confirmatory factor analysis (CFA), hierarchical regression analysis, path analysis, and structural equation modeling (SEM). EFA was employed in the initial assessment of factor structures for the development and validation of psychometric scales in order to (i) identify the most relevant factors for assessing the construct, (ii) reduce the number of variables needed, and (iii) improve the validity and reliability of the scales. EFA has specific limitations, including the subjectivity of interpretation, vulnerability to sampling error, and the risk of over- or under-extracting factors (Williams et al., 2010; Ford et al., 1986; Tabachnick & Fidell, 2007). Nevertheless, EFA helped enhance research quality in this thesis by identifying variable structures, decreasing measurement variables, and providing insights for future studies.

CFA was used in the scale development phase to confirm the factor structures obtained in EFA. CFA involves specifying a model that includes the number of factors, the relationship between factors and observed variables, and any constraints or assumptions about factor loadings, correlations, or error variances (Jackson et al., 2009). The model is then tested against the data to see how well it fits. CFA provides an unbiased and clear approach to scale development and validation, but pre-specifying the factor structure may limit the ability to identify unforeseen factors (Floyd & Widaman, 1995). Despite being difficult to interpret, CFA is a valuable

method that offers a hypothesis-driven approach to examining the factor structure of the scales that were developed and validated in the present thesis.

In Chapter 5, hierarchical regression analysis was used to test PMWS's convergent validity. It included mukbang watching motivations as independent variables and AMW as the dependent variable. This method explores the relationship between variables while accounting for the effects of other variables (Kline, 2015). It examined the unique contribution of each motivation in predicting the AMW, identified significant predictors, and provided insights into the relative importance of the mukbang watching motives with regard to their associations to AMW.

In Chapters 6, 7, and 9, path analysis was utilised to examine the direct and indirect associations of emotional and psychological factors with AMW, using graphical models to depict hypothesised relationships. Furthermore, Chapters 4 and 5 employed SEM for CFA, and Chapter 9 used SEM to examine the direct association between AMW and internet addiction as well as disordered eating. Using diverse data analysis methods for different variable associations in the thesis reduces the drawbacks of each method, resulting in a more reliable analysis. Path analysis estimates linear relationships among variables in a model without latent variables, while SEM allows for both latent and observed variables and complex relationships (Howitt & Crammer, 2011). Path analysis is suitable for simpler models with directly measured variables, while SEM can handle more complex models with multiple latent and observed variables. SEM uses fit indices, including RMSEA, CFI, and chi-square, to evaluate the model fit (Kline, 2015).

In Chapter 10, qualitative data were collected using semi-structured interviews. Open-ended questions referencing the adapted diagnostic criteria for gaming disorder in the DSM-5 (APA, 2013) applied to mukbang watching were included in the interview guide to explore participants' mukbang behaviour and assess the presence of addiction symptoms among mukbang viewers. The qualitative study was incorporated into validating a quantitative data

model/variant within the triangulation design approach to mixed methods. Semi-structured interviews in qualitative research enable comprehensive data gathering on complex topics (Kallio et al., 2016). There are several strengths of using semi-structured interviews. For instance, they offer flexibility to tailor questions and prompts to interviewees, allowing for greater exploration and in-depth insights compared to structured interviews (Rubin & Rubin, 2011). Furthermore, semi-structured interviews prioritise interviewee perspective, allowing open-ended responses and a more complete understanding of experiences. They establish validity by verifying responses, and offer insight into social and cultural context (Robinson, 2014). Semi-structured interviews also have limitations, including interviewer bias and socially desirable responses by participants. The flexibility of the interview structure may lead to variability in data collected (Adhabi & Anozie, 2017). Analysis can be time-consuming, especially with a large volume of data. The open-ended nature of questions can provide more complex data that may be more challenging to analyse (Rolfe, 2006).

Directed content analysis was used to analyse the data collected from the interviews. This approach is a qualitative data analysis method that involves using a predefined set of categories or coding framework to analyse the data (Hsieh & Shannon, 2005). The thesis utilised a theoretical framework based on adapting the official diagnostic criteria of gaming disorder in the DSM-5, exploring each of the nine symptoms as key themes. Then, sub-themes for each key-theme were examined and determined. Advantages of directed content analysis include the ability to identify specific themes or categories in advance, ensuring relevance to research objectives, allowing for a better integration with quantitative research, facilitating comparison with existing research or theoretical frameworks, enhancing the validity and reliability of findings, reducing the risk of researcher bias, and being less time-consuming than inductive content analysis (Elo, & Kyngäs, 2008; Graneheim & Lundman, 2004). However, directed content analysis has some potential limitations. For instance, the predetermined coding

framework may lack flexibility, which can hinder the identification of unanticipated themes or insights. This approach may also limit the richness of the analysis and fail to capture nuances or complexities outside of the predetermined categories (Sandelowski, 1995).

Consequently, this thesis employed diverse research methodologies within the pragmatic paradigm (Creswell, 2014). Quantitative research was utilised to develop assessment tools for studying AMW, while qualitative methods were used to explore if symptoms were present in the behaviour of mukbang watchers. These methods were integrated to investigate factors associated with AMW and gain a better understanding of this behaviour. Mixed-methods research has numerous benefits by combining quantitative and qualitative methods. It provides a more comprehensive understanding of research questions or issues, where quantitative data shows statistical patterns and trends and qualitative data provides in-depth insights and rich descriptions (Creswell, 2014). Triangulation enhances the validity and reliability of research findings (Johnson & Onwuegbuzie, 2004). Mixed-methods research offers flexibility in research design, allowing researchers to tailor their approach to suit the research question or issue at hand and select the most appropriate methods and techniques for each phase of their study (Hanson et al., 2005). Consequently, this thesis obtained triangulated findings that provide a more comprehensive understanding of the addictive symptoms of mukbang watching and their associations with individual difference, emotional, and psychological factors.

Mixed-methods research involves several typologies and designs that combine quantitative and qualitative methods. According to Morgan (1998), these designs include: (i) qual followed by QUANT, (ii) quant followed by QUAL, (iii) QUANT followed by qual, and (iv) QUAL followed by quant (all lower case means secondary method and all upper case denotes primary method). The order of the designs is decided based on the relative importance of each method. The present thesis used the third design (i.e., QUANT followed by qual) and began with a pilot psychometric study that provided preliminary evidence of the potential risky use of mukbang

watching. This was followed by additional quantitative studies to supplement the initial findings. In the final stage, after establishing the potential existence of AMW among a minority of mukbang viewers using cross-sectional studies, qualitative examination was used to obtain more detailed and high-quality data on the symptoms of AMW. Consequently, this thesis obtained triangulated findings that provide a more comprehensive understanding of the addictive symptoms of mukbang watching and their associations with individual difference, emotional, and psychological factors.

11.2 Limitations and future directions

This thesis has several limitations that should be considered when interpreting the results. A scoping review (Chapter 2) was conducted to review the existing knowledge on the psychology of mukbang watching, which typically provides a broad overview of the literature but may not delve as deeply as systematic reviews or meta-analyses (Gentles et al., 2010). Scoping reviews may be prone to selection bias due to less rigorous inclusion criteria and search strategy compared to systematic reviews (Feehan et al., 2011). However, scoping reviews offer flexibility in methodology, allowing researchers to adapt the review process to suit the specific research question, which is advantageous for addressing broad research questions that may not be suitable for other review methodologies (Pham et al., 2014). In future studies, systematic reviews and/or meta-analyses may be considered to further explore the psychology of mukbang watching and AMW in a more comprehensive and rigorous manner.

Chapters 4, 5, 6, 7, 8 and 9 utilised self-report assessment tools to gather data. However, self-report assessment has a number of specific limitations, including subjectivity and bias, limited validity, reliance on memory, and language and communication barriers. Moreover, the cross-sectional chapters' results should be approached with caution, as they do not establish causal relationships among the variables. Nevertheless, the aforementioned investigations highlight

important associations among variables, which can serve as a basis for future empirical research on AMW. To obtain a more accurate understanding of the nature and foundations of AMW, longitudinal investigations are warranted. Therefore, future studies should use a longitudinal design to confirm the cross-sectional findings obtained in this thesis and determine the directions of the aforementioned associations and the causality of the variables. This could show which variables contribute to the development and maintenance of AMW and the impact of AMW on other behavioural addictions and individuals' well-being.

Additionally, it is recommended that future longitudinal studies on AMW use a larger participant pool from different age groups and countries to replicate and test the preliminary findings obtained in this thesis and track AMW symptoms over time to establish if AMW is a temporary or persistent phenomenon. In addition to the aforementioned suggestions, it is also recommended that researchers conduct neuro-imaging studies to investigate the effects of watching mukbang on relevant areas of the brain. This could provide insights into the neurological aspects of AMW and provide insight into how the brain responds to stimuli associated with excessive media consumption, particularly in the context of mukbang. Neuro-imaging techniques could be utilised to examine brain activity and connectivity patterns during exposure to mukbang content. This could contribute to a better understanding of the underlying neural mechanisms involved in AMW and provide valuable insights for comprehending possible reasons that transform regular mukbang watching into AMW.

An additional limitation is that the studies presented in Chapters 6, 8, and 9 utilised the Mukbang Addiction Scale (MAS), while the studies in Chapters 5 and 7 used the Problematic Mukbang Watching Scale (PMWS) to assess AMW. Although both scales assess similar criteria related to addictive symptoms of AMW, they have different conceptual frameworks, which may limit direct comparison of the findings. Therefore, it is recommended that future studies replicate and validate the findings using both the MAS, the PMWS, as well as other newly

developed and validated assessment tools to assess AMW. This would help to establish consistency and robustness of the findings across different measurement approaches and enhance the understanding of AMW as a phenomenon.

Future research could further explore the relationships examined in the present thesis using different assessment tools. For instance, in Chapter 8, disordered eating was assessed as a single construct with five items. Therefore, future studies are encouraged to use more detailed tools to robustly assess each eating disorder separately and investigate their specific associations with AMW. Similarly, in Chapter 9, personality traits were assessed using single-item scales for each dimension, and using more comprehensive and diversified assessment tools with a higher number of items could provide a more nuanced understanding of individual differences related to AMW. Additionally, future studies are encouraged to investigate other variables that were not examined in the context of the present thesis, including attachment styles, childhood experiences, personality disorders, other behavioural addictions, substance and alcohol abuse, and demographic variables. Exploring the bidirectional relationships between these variables and AMW could provide valuable insights into the multifaceted nature of AMW. Moreover, examining potential mediating and moderating roles of the aforementioned variables could help uncover underlying mechanisms and factors that may influence the development and maintenance of AMW.

A qualitative research design was utilised in Chapter 10 to explore the addictive symptoms associated with mukbang watching. However, it is important to acknowledge that the interview questions used in the qualitative study were more structured than initially intended. Participants may have felt constrained by the predetermined response options, potentially missing out on potentially rich qualitative data not directly related to the questions asked. AMW might have required more flexible and exploratory approaches to fully understand participants' experiences and perspectives. The narrow scope may have restricted the comprehensiveness of the data

collected. Furthermore, the content-directed method that was used to analyse the qualitative data may be prone to specific limitations including rigidity (i.e. limited flexibility in exploring tangential ideas and novel insights), narrow focus and creativity (i.e. limited depth and richness of the conversations), and overemphasis on memorization (i.e. repeating predefined content rather than engaging critically with the material). Additionally, qualitative interviews typically involve a small sample size and are focused on specific contexts or populations, which may limit the generalizability of the findings.

Despite these limitations, the qualitative examination of addictive symptoms related to mukbang watching in this thesis yielded valuable insights on the subject, laying the groundwork for future explorations on the subject. In future research, it may be worthwhile to consider employing different data collection methods, such as experimental design, observational methods, case study research, or meta-analysis, to replicate and further validate the findings obtained from qualitative interviews. This could provide a more comprehensive and robust understanding of the AMW phenomenon.

Furthermore, the expertise of the interviewer is a crucial factor in qualitative studies for a number of components including establishing rapport and trust, effective probing and follow-up, managing power dynamics and bias, and interpreting and analysing data. Despite the present author's limited experience in qualitative interviews, efforts were made to establish rapport with participants, ask open-ended questions, and create a non-judgmental and supportive environment for participants to share their perspectives and experiences freely. The author sought guidance from experienced qualitative researchers (i.e., the supervisory team) during the interview process in this thesis.

11.3 Implications

This thesis has important implications that warrant emphasis. By examining AMW for the first time, this research contributes to the existing body of literature on technology-related behavioural addictions and introduces a novel area of investigation. Prior to this thesis, scholarly research on behavioural addictions broadly focused on five online behaviours including addictive use of general/unspecified internet, social media, online shopping, online gambling, and online sex (Brand et al., 2016, 2019; Montag et al., 2015). The preliminary evidence presented in this thesis provides insight regarding a distinct type of potentially addictive behaviour that may stem from real-life disordered eating and a pathological relationship with food. Findings from this thesis are expected to raise awareness not only among academics and scholars, but also among the general public, about the potential risks and negative consequences associated with AMW. It is hoped it will draw attention to the potentially addictive nature of mukbang watching and stimulate public discourse and discussions on the topic, ultimately leading to increased awareness and understanding of the issue. Consequently, the findings of this thesis have the potential to contribute to the growing body of literature on behavioural addictions and highlight the need for further research in this emerging field.

The research findings presented in this thesis contribute to the identification of potential risk factors for AMW, including underlying psychological, emotional, and motivational factors that contribute to the development of addictive behaviours related to mukbang watching. This information can be valuable for practitioners and policymakers in developing effective prevention and intervention strategies to address AMW. The thesis also provides individuals struggling with AMW the opportunity to recognize addiction signs, seek appropriate help and support by contacting relevant health institutions and organizations, and make informed decisions about their viewing behaviours. Moreover, the correlations identified in this thesis offer insights for families, educators, and mental health professionals in understanding and

addressing AMW in their respective settings. For instance, the research findings suggest that individuals who experience increased loneliness, anxiety, emotional problems, real-life eating problems, and addictive internet use may be at higher risk of coping with their problems via AMW. Therefore, prevention and intervention efforts may need to be tailored accordingly to address these underlying factors associated with AMW.

Another consideration arising from the present thesis is the possibility of revising the conceptualization of food addiction. The conceptualization of food addiction is a topic of ongoing debate, with differing perspectives. One argument posits that food addiction is akin to substance addiction, where individuals develop an addiction to food itself (e.g., fat, sugar, high calorie foods). Another viewpoint suggests that the act of eating can be addictive, resembling behavioural addiction. (Schulte et al., 2017; Şengör & Gezer, 2019). Despite varying perspectives, food addiction is generally referred to as the excessive consumption of specific foods in a manner reminiscent of addiction, which can have detrimental effects on the mental and physical health of individuals (Zawartailo et al., 2020).

Given the findings of the present thesis indicating the potential presence of AMW in specific individuals, it is suggested that researchers carefully and thoroughly examine the overlap between food addiction and AMW, and consider incorporating AMW into the definition and conceptualization of food addiction. This proposition is based on the current definitions and understanding of sex addiction. Sex addiction is conceptualised as engaging in sexual activities with a high level of intensity, which may include fantasies, masturbation, intercourse, pornography, and utilising various media including cybersex and telephone sex (Andreassen et al., 2018). Consequently, research on sex addiction robustly established that pornography consumption is a significant component of sex addiction, particularly when individuals are unable to satisfy their sexual needs in real-life contexts (Voon et al., 2014). Similarly, individuals with pathological relationships with food (e.g., food addicts), can be expected to

fulfil their eating-related needs through watching others eat, especially when they are unable to consume food in real-life situations. As such, the present thesis holds implications for scholars and health professionals who are dedicated to investigating and comprehending the dynamics of addictive food consumption.

11.4 Final remarks

This doctoral thesis has identified some of the psychological and health implications associated with addiction-like mukbang watching. More specifically, it has provided a scoping review that synthesises current knowledge on the psychology of mukbang watching. Moreover, several psychometric scales to assess AMW and mukbang watching motivations have been developed and validated within the thesis. Furthermore, the thesis identifies potential risk factors, correlates, and consequences of AMW in the context of mukbang watching. The thesis also presents qualitative evidence of addictive symptoms among some mukbang viewers. Overall, the findings support the notion that while regular mukbang watching may have some benefits for specific viewers (e.g., mitigating social isolation), uncontrolled engagement in mukbang watching may manifest as an online addictive behaviour that can jeopardise the mental and physical well-being of individuals.

REFERENCES

- Adams, G. R., Sullivan, A. M., Horton, K. D., Menna, R., & Guilmette, A. M. (2007). A study of differences in Canadian university students' gambling and proximity to a casino. *Journal of Gambling Issues, 19*, 9-17. <https://psycnet.apa.org/doi/10.4309/jgi.2007.19.1>
- Adhabi, E., & Anozie, C. B. (2017). Literature review for the type of interview in qualitative research. *International Journal of Education, 9*(3), 86-97. <https://doi.org/10.5296/ije.v9i3.11483>
- Ágh, T., Kovács, G., Supina, D., Pawaskar, M., Herman, B. K., Vokó, Z., & Sheehan, D. V. (2016). A systematic review of the health-related quality of life and economic burdens of anorexia nervosa, bulimia nervosa, and binge eating disorder. *Eating and Weight Disorders-Studies on Anorexia, Bulimia and Obesity, 21*(3), 353-364. <https://doi.org/10.1007/s40519-016-0264-x>
- Akbari, M., Bahadori, M. H., Khanbabaei, S., Milan, B. B., Horvath, Z., Griffiths, M. D., & Demetrovics, Z. (2022). Psychological predictors of the co-occurrence of problematic gaming, gambling, and social media use among adolescents. *Computers in Human Behavior, e107589*. <https://doi.org/10.1016/j.chb.2022.107589>
- Alabi, O. F. (2013). A survey of Facebook addiction level among selected Nigerian University undergraduates. *New Media and Mass Communication, 10*(2012), 70-80.
- Alharahsheh, H. H., & Pius, A. (2020). A review of key paradigms: Positivism VS interpretivism. *Global Academic Journal of Humanities and Social Sciences, 2*(3), 39-43. <https://doi.org/10.36348/gajhss.2020.v02i03.001>
- Allen, A., Kannis-Dymand, L., & Katsikitis, M. (2017). Problematic internet pornography use: The role of craving, desire thinking, and metacognition. *Addictive Behaviors, 70*, 65-71. <https://doi.org/10.1016/j.addbeh.2017.02.001>

- Amarnath, R. P., Abell, T. L., & Malagelada, J. R. (1986). The rumination syndrome in adults: A characteristic manometric pattern. *Annals of Internal Medicine*, *105*(4), 513-518.
<https://doi.org/10.7326/0003-4819-105-4-513>
- American Psychiatric Association (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.
- Anderson, E. L., Steen, E., & Stavropoulos, V. (2017). Internet use and problematic internet use: A systematic review of longitudinal research trends in adolescence and emergent adulthood. *International Journal of Adolescence and Youth*, *22*(4), 430-454.
<https://doi.org/10.1080/02673843.2016.1227716>
- Andreassen, C. S. (2015). Online social network site addiction: A comprehensive review. *Current Addiction Reports*, *2*(2), 175-184. <https://doi.org/10.1007/s40429-015-0056-9>
- Andreassen, C. S., Billieux, J., Griffiths, M. D., Kuss, D. J., Demetrovics, Z., Mazzoni, E., & Pallesen, S. (2016). The relationship between addictive use of social media and video games and symptoms of psychiatric disorders: A large-scale cross-sectional study. *Psychology of Addictive Behaviors*, *30*(2), 252-262. <https://doi.org/10.1037/adb0000160>
- Andreassen, C. S., Griffiths, M. D., Hetland, J., & Pallesen, S. (2012). Development of a work addiction scale. *Scandinavian Journal of Psychology*, *53*(3), 265-272.
<https://doi.org/10.1111/j.1467-9450.2012.00947.x>
- Andreassen, C. S., Griffiths, M. D., Gjertsen, S. R., Krossbakken, E., Kvam, S., & Pallesen, S. (2013). The relationship between behavioral addictions and the five-factor model of personality. *Journal of Behavioral Addictions*, *2*, 90-99.
<https://doi.org/10.1556/jba.2.2013.003>
- Andreassen, C. S., Griffiths, M. D., Pallesen, S., Bilder, R. M., Torsheim, T., & Aboujaoude, E. (2015). The Bergen Shopping Addiction Scale: Reliability and validity of a brief screening test. *Frontiers in Psychology*, *6*, 1374.

<https://doi.org/10.3389/fpsyg.2015.01374>

Andreassen, C.S., & Pallesen, S. (2014). Social network site addiction-an overview. *Current Pharmaceutical Design*, 20(25), 4053-4061.

<https://doi.org/10.2174/13816128113199990616>

Andreassen, C. S., Pallesen, S., Griffiths, M. D., Torsheim, T., & Sinha, R. (2018). The development and validation of the Bergen–Yale Sex Addiction Scale with a large national sample. *Frontiers in Psychology*, 9, 144.

<https://doi.org/10.3389/fpsyg.2018.00144>

Andreassen, C. S., Pallesen, S., Torsheim, T., Demetrovics, Z., & Griffiths, M. D. (2018). Tanning addiction: Conceptualization, assessment and correlates. *British Journal of Dermatology*, 179(2), 345-352. <https://doi.org/10.1111/bjd.16480>

Andreassen, C. S., Torsheim, T., Brunborg, G. S., & Pallesen, S. (2012). Development of a Facebook addiction scale. *Psychological Reports*, 110(2), 501-517.

<https://doi.org/10.2466/02.09.18.PR0.110.2.501-517>

Anjani, L., Mok, T., Tang, A., Oehlberg, L., & Boon, G. W. (2020). Why do people watch others eat? An empirical study on the motivations and practices of mukbang viewers. In *CHI 2020: Proceedings of the 2020 SIGCHI Conference on Human Factors in Computing Systems*. Retrieved December 14, 2021, from:

<http://hccitang.org/papers/2020-chi2020-mukbang.pdf>

Arce, E., & Santisteban, C. (2006). Impulsivity: A review. *Psicothema*, 18(2), 213-220. Retrieved February 12, 2022, from:

<https://reunido.uniovi.es/index.php/PST/article/view/8495/8359>

Arcelus, J., Mitchell, A. J., Wales, J., & Nielsen, S. (2011). Mortality rates in patients with anorexia nervosa and other eating disorders: A meta-analysis of 36 studies. *Archives of General Psychiatry*, 68(7), 724-731. <https://doi.org/10.1001/archgenpsychiatry.2011.74>

- Ardic, K., & Özsoy, E. (2016). Examining the relationship between the Dark Triad traits and Big Five personality dimensions. In *Proceedings of the Fifth European Academic Research Conference on Global Business, Economics, Finance and Banking*. Retrieved December 14, 2021, from: https://www.researchgate.net/profile/Emrah-Oezsoy/publication/311680942_Examining_the_Relationships_between_the_Dark_Triad_Traits_and_Big_Five_Personality_Dimensions/links/5f820444458515b7cf76fcb9/Examining-the-Relationships-between-the-Dark-Triad-Traits-and-Big-Five-Personality-Dimensions.pdf
- Arksey, H., & O'Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology*, 8, 19-32.
<https://doi.org/10.1080/1364557032000119616>
- Aslam, S. (2018). YouTube by the numbers: Stats, demographics & fun facts. Retrieved April 1, 2019, from: <https://www.omnicoreagency.com/youtube-statistics/>.
- Associated Press (2019). Meet South Korea's binge eating YouTube stars: Thousands watch videos of young men and women consuming colossal amounts of food as bizarre 'mukbang' trend hits the U.S. *Daily Mail*, October 3, 2019. Retrieved October 16, 2019, from: <https://www.dailymail.co.uk/news/article-7534875/Binge-eating-videos-big-audience-weight-loss.html>.
- Atroszko, P. A., Andreassen, C. S., Griffiths, M. D., & Pallesen, S. (2015). Study addiction—A new area of psychological study: Conceptualization, assessment, and preliminary empirical findings. *Journal of Behavioral Addictions*, 4(2), 75-84.
<https://doi.org/10.1556/2006.4.2015.007>
- Atroszko, P. A., Balcerowska, J. M., Bereznowski, P., Biernatowska, A., Pallesen, S., & Andreassen, C. S. (2018). Facebook addiction among Polish undergraduate students:

- Validity of measurement and relationship with personality and well-being. *Computers in Human Behavior*, 85, 329-338. <https://doi.org/10.1016/j.chb.2018.04.001>
- Auer, M., & Griffiths, M. D. (2022). Using artificial intelligence algorithms to predict self-reported problem gambling with account-based player data in an online casino setting. *Journal of Gambling Studies*. Advanced online publication.
<https://doi.org/10.1007/s10899-022-10139-1>
- Awan, H. A., Aamir, A., Diwan, M. N., Ullah, I., Pereira-Sanchez, V., Ramalho, R., ... & Virani, S. (2021). Internet and pornography use during the COVID-19 pandemic: Presumed impact and what can be done. *Frontiers in Psychiatry*, 12, 623508.
<https://doi.org/10.3389/fpsy.2021.623508>
- Aydemir, Ö., Köksal, B., Sapmaz, S. Y., & Yüceyar, H. (2015). Reliability and validity of Turkish form of SCOFF Eating Disorders Scale. *Anatolian Journal of Psychiatry*, 16, 31-35. <https://doi.org/10.5455/apd.174219>
- Babayiğit, Z., Alçalar, N., & Bahadır, G. (2013). Investigation of psychopathology and cognitive aspects of binge eating disorder in obese women. *Turkiye Klinikleri Journal of Medical Sciences*, 33, 1077–1087.
- Bagaric, M., Touyz, S., Heriseanu, A., Conti, J., & Hay, P. (2020). Are bulimia nervosa and binge eating disorder increasing? Results of a population-based study of lifetime prevalence and lifetime prevalence by age in South Australia. *European Eating Disorders Review*, 28(3), 260-268. <https://doi.org/10.1002/erv.2726>
- Balakrishnan, J., & Griffiths, M. D. (2017). Social media addiction: What is the role of content in YouTube?. *Journal of Behavioral Addictions*, 6(3), 364-377.
<https://doi.org/10.1556/2006.6.2017.058>

- Ballabio, M., Griffiths, M. D., Urbán, R., Quartiroli, A., Demetrovics, Z., Király, O. (2017). Do gaming motives mediate between psychiatric symptoms and problematic gaming? An empirical survey study. *Addiction Research and Theory*, 25, 397-408.
<https://doi.org/10.1080/16066359.2017.1305360>
- Ballester-Arnal, R., García-Barba, M., Castro-Calvo, J., Giménez-García, C., & Gil-Llario, M. D. (2022). Pornography consumption in people of different age groups: An analysis based on gender, contents, and consequences. *Sexuality Research and Social Policy*. Advanced online publication. <https://doi.org/10.1007/s13178-022-00720-z>
- Balta, S., Jonason, P., Denes, A., Emirtekin, E., Tosuntaş, Ş. B., Kircaburun, K., & Griffiths, M. D. (2019). Dark personality traits and problematic smartphone use: The mediating role of fearful attachment. *Personality and Individual Differences*, 149, 214-219.
<https://doi.org/10.1016/j.paid.2019.06.005>
- Baranowski, A. M., Vogl, R., & Stark, R. (2019). Prevalence and determinants of problematic online pornography use in a sample of German women. *Journal of Sexual Medicine*, 16(8), 1274-1282. <https://doi.org/10.1016/j.jsxm.2019.05.010>
- Baumeister, R. F. (2002). Yielding to temptation: Self-control failure, impulsive purchasing, and consumer behavior. *Journal of Consumer Research*, 28(4), 670-676.
<https://doi.org/10.1086/338209>
- Beaton, D. E., Bombardier, C., Guillemin, F., & Ferraz, M. B. (2000). Guidelines for the process of cross-cultural adaptation of self-report measures. *Spine*, 25, 3186-3191.
<https://doi.org/10.1097/00007632-200012150-00014>
- Berking, M., & Wupperman, P. (2012). Emotion regulation and mental health: Recent findings, current challenges, and future directions. *Current Opinion in Psychiatry*, 25(2), 128-134.
<https://doi.org/10.1097/YCO.0b013e3283503669>

- Bertot, J. C., Jaeger, P. T., Munson, S., & Glaisyer, T. (2010). Social media technology and government transparency. *Computer*, *43*(11), 53-59.
<http://dx.doi.org/10.1097/YCO.0b013e3283503669>
- Bessiere, K., Kiesler, S., Kraut, R., & Boneva, B. S. (2008). Effects of Internet use and social resources on changes in depression. *Information, Community & Society*, *11*, 47-70.
<https://doi.org/10.1080/13691180701858851>
- Bhatia, M. S., & Gupta, R. (2009). Pica responding to SSRI: An OCD spectrum disorder? *The World Journal of Biological Psychiatry*, *10*, 936-938.
<https://doi.org/10.1080/15622970701308389>
- Billieux, J., Philippot, P., Schmid, C., Maurage, P., de Mol, J., & Van der Linden, M. (2015). Is dysfunctional use of the mobile phone a behavioural addiction? Confronting symptom-based versus process-based approaches. *Clinical Psychology and Psychotherapy*, *22*, 460-468. <https://doi.org/10.1002/cpp.1910>
- Billieux, J., Schimmenti, A., Khazaal, Y., Maurage, P., & Heeren, A. (2015). Are we overpathologizing everyday life? A tenable blueprint for behavioral addiction research. *Journal of Behavioral Addictions*, *4*, 119-123. <https://doi.org/10.1556/2006.4.2015.009>
- Bjureberg, J., Ljótsson, B., Tull, M. T., Hedman, E., Sahlin, H., Lundh, L. G., ... & Gratz, K. L. (2016). Development and validation of a brief version of the difficulties in emotion regulation scale: The DERS-16. *Journal of Psychopathology and Behavioral Assessment*, *38*(2), 284-296. <https://doi.org/10.1007/s10862-015-9514-x>
- Błachnio, A., Przepiórka, A., & Pantic, I. (2015). Internet use, Facebook intrusion, and depression: Results of a cross-sectional study. *European Psychiatry*, *30*, 681-684.
<https://doi.org/10.1016/j.eurpsy.2015.04.002>
- Black, D. W. (2022). Compulsive shopping: A review and update. *Current Opinion in Psychology*, e101321. <https://doi.org/10.1016/j.copsyc.2022.101321>

- Bloom, D. (2013). South Korea 'dinner porn' craze sweeps internet as people live-stream themselves gorging on food... and get paid for it, *Daily Mail*, December 21, 2013. Retrieved October 16, 2019, from: <https://www.dailymail.co.uk/news/article-2527235/South-Korea-dinner-porn-craze-sweeps-internet-people-live-stream-gorging-food-paid-it.html>.
- Bora, E., & Köse, S. (2016). Meta-analysis of theory of mind in anorexia nervosa and bulimia nervosa: A specific impairment of cognitive perspective taking in anorexia nervosa?. *International Journal of Eating Disorders*, *49*(8), 739-740. <https://doi.org/10.1002/eat.22572>
- Bóthe, B., Tóth-Király, I., Griffiths, M. D., Potenza, M. N., Orosz, G., & Demetrovics, Z. (2021). Are sexual functioning problems associated with frequent pornography use and/or problematic pornography use? Results from a large community survey including males and females. *Addictive Behaviors*, *112*, 106603. <https://doi.org/10.1016/j.addbeh.2020.106603>
- Bóthe, B., Toth-Kiraly, I., Potenza, M. N., Griffiths, M. D., Orosz, G., & Demetrovics, Z. (2019). Revisiting the role of impulsivity and compulsivity in problematic sexual behaviors. *Journal of Sex Research*, *56*(2), 166-179. <https://doi.org/10.1080/00224499.2018.1480744>
- Bóthe, B., Tóth-Király, I., Zsila, Á., Griffiths, M. D., Demetrovics, Z., & Orosz, G. (2018). The development of the problematic pornography consumption scale (PPCS). *The Journal of Sex Research*, *55*(3), 395-406. <https://doi.org/10.1080/00224499.2017.1291798>
- Boudali, M., Hamza, M., Bourgou, S., Jouini, L., Charfi, F., & Belhadj, A. (2017). Depression and anxiety among Tunisian medical students “binge viewers”. *European Psychiatry*, *41*, 675-676. <https://doi.org/10.1016/j.eurpsy.2017.01.1163>

- Boyd, M. (2019). Woman tastes bizarre newly discovered penis-shaped clam and her reaction is hilarious. *Daily Mirror*, May 17, 2019. Retrieved October 16, 2019, from: <https://www.mirror.co.uk/news/weird-news/woman-eats-newly-discovered-phallic-16158634>.
- Brailovskaia, J., Bierhoff, H. W., Rohmann, E., Raeder, F., & Margraf, J. (2020). The relationship between narcissism, intensity of Facebook use, Facebook flow and Facebook addiction. *Addictive Behaviors Reports*, *11*, 100265. <https://doi.org/10.1016/j.abrep.2020.100265>
- Brand, M., Antons, S., Wegmann, E., & Potenza, M. N. (2019). Theoretical assumptions on pornography problems due to moral incongruence and mechanisms of addictive or compulsive use of pornography: Are the two “conditions” as theoretically distinct as suggested? *Archives of Sexual Behavior*, *48*(2), 417-423. <https://doi.org/10.1007/s10508-018-1293-5>
- Brand, M., Wegmann, E., Stark, R., Müller, A., Wölfling, K., Robbins, T. W., & Potenza, M. N. (2019). The Interaction of Person-Affect-Cognition-Execution (I-PACE) model for addictive behaviors: Update, generalization to addictive behaviors beyond internet-use disorders, and specification of the process character of addictive behaviors. *Neuroscience & Biobehavioral Reviews*, *104*, 1-10. <https://doi.org/10.1016/j.neubiorev.2019.06.032>
- Brand, M., Young, K. S., Laier, C., Wölfling, K., & Potenza, M. N. (2016). Integrating psychological and neurobiological considerations regarding the development and maintenance of specific Internet-use disorders: An Interaction of Person-Affect-Cognition-Execution (I-PACE) model. *Neuroscience & Biobehavioral Reviews*, *71*, 252-266. <https://doi.org/10.1016/j.neubiorev.2016.08.033>
- Bremer, J. (2005). The internet and children: advantages and disadvantages. *Child and Adolescent Psychiatric Clinics*, *14*(3), 405-428.

<https://doi.org/10.1016/j.chc.2005.02.003>

- Brennan, J. (2017). Public-sex: Viewer discourse on Deerborn's 'homemade' gay porn. *Psychology & Sexuality, 8*, 55-68. <https://doi.org/10.1080/19419899.2017.1296485>
- Brigham, K. S., Manzo, L. D., Eddy, K. T., & Thomas, J. J. (2018). Evaluation and treatment of avoidant/restrictive food intake disorder (ARFID) in adolescents. *Current Pediatrics Reports, 6*(2), 107-113. <https://doi.org/10.1007/s40124-018-0162-y>
- Brown, C. C., Durtschi, J. A., Carroll, J. S., & Willoughby, B. J. (2017). Understanding and predicting classes of college students who use pornography. *Computers in Human Behavior, 66*, 114-121. <https://doi.org/10.1016/j.chb.2016.09.008>
- Brown, Z., & Tiggemann, M. (2016). Attractive celebrity and peer images on Instagram: Effect on women's mood and body image. *Body Image, 19*, 37-43.
<https://doi.org/10.1016/j.bodyim.2016.08.007>
- Brownley, K. A., Berkman, N. D., Peat, C. M., Lohr, K. N., Cullen, K. E., Bann, C. M., & Bulik, C. M. (2016). Binge-eating disorder in adults: A systematic review and meta-analysis. *Annals of Internal Medicine, 165*, 409-420. <https://doi.org/10.7326/M15-2455>
- Brunault, P., Ducluzeau, P. H., Courtois, R., Bourbao-Tournois, C., Delbachian, I., Réveillère, C., et al. (2018). Food addiction is associated with higher neuroticism, lower conscientiousness, higher impulsivity, but lower extraversion in obese patient candidates for bariatric surgery. *Substance Use & Misuse, 53*, 1919–1923.
<https://doi.org/10.1080/10826084.2018.1433212>
- Bruno, A. (2016). Food as object and subject in Korean media. *Korean Cultural Studies, 31*, 131-165. <http://dx.doi.org/10.17792/kcs.2016.31..131>
- Bruno, A. L., & Chung, S. (2017). Mōk pang: Pay me and I'll show you how much I can eat for your pleasure. *Journal of Japanese and Korean Cinema, 9*, 155-171.
<https://doi.org/10.1080/17564905.2017.1368150>

- Bryant, M. (2016). Who said that dinner for one had to be lonely! Men and women share videos of themselves binge eating online - to the delight of thousands - as bizarre South Korean 'mukbang' trend hits US. *Daily Mail*, November 8, 2016. Retrieved October 16, 2019, from: <https://www.dailymail.co.uk/femail/article-3914642/Who-said-dinner-one-lonely-Men-women-share-videos-binge-eating-online-delight-THOUSANDS-bizarre-South-Korean-mukbang-trend-hits-US.html>.
- Bryant, F. B., King, S. P., & Smart, C. M. (2007). Multivariate statistical strategies for construct validation in positive psychology. In A. D. Ong & M. H. M. V. Dulmen (Eds.), *Oxford handbook of methods in positive psychology* (pp. 61–82). Oxford: Oxford University Press.
- Buecker, S., Maes, M., Denissen, J. J., & Luhmann, M. (2020). Loneliness and the Big Five personality traits: A meta-analysis. *European Journal of Personality*, *34*(1), 8-28.
<https://doi.org/10.1002/per.2229>
- Burmeister, J. M., Hinman, N., Koball, A., Hoffmann, D. A., & Carels, R. A. (2013). Food addiction in adults seeking weight loss treatment. Implications for psychosocial health and weight loss. *Appetite*, *60*, 103-110. <https://doi.org/10.1016/j.appet.2012.09.013>
- Burrows, T., Skinner, J., McKenna, R., & Rollo, M. (2017). Food addiction, binge eating disorder, and obesity: Is there a relationship? *Behavioral Sciences*, *7*, 54.
<https://doi.org/10.3390/bs7030054>
- Busalim, A. H., Masrom, M., & Zakaria, W. N. B. W. (2019). The impact of Facebook addiction and self-esteem on students' academic performance: A multi-group analysis. *Computers & Education*, *142*, 103651. <https://doi.org/10.1016/j.compedu.2019.103651>
- Byrne, B. M. (2016). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. London, England: Routledge.

- Calado, F., & Griffiths, M. D. (2016). Problem gambling worldwide: An update and systematic review of empirical research (2000–2015). *Journal of Behavioral Addictions, 5*(4), 592-613. <https://doi.org/10.1556/2006.5.2016.073>
- Caplan, S. E. (2002). Problematic internet use and psychosocial well-being: Development of a theory-based cognitive–behavioral measurement instrument. *Computers in Human Behavior, 18*(5), 553-575. [https://doi.org/10.1016/S0747-5632\(02\)00004-3](https://doi.org/10.1016/S0747-5632(02)00004-3)
- Carbonell, X., Chamarro, A., Oberst, U., Rodrigo, B., & Prades, M. (2018). Problematic use of the internet and smartphones in university students: 2006–2017. *International Journal of Environmental Research and Public Health, 15*(3), 475. <https://doi.org/10.3390/ijerph15030475>
- Carnes, S., & Love, T. (2017). Separating models obscures the scientific underpinnings of sex addiction as a disorder. *Archives of Sexual Behavior, 46*(8), 2253-2256. <https://doi.org/10.1007/s10508-017-1072-8>
- Carriere, C., Michel, G., Féart, C., Pellay, H., Onorato, O., Barat, P., & Thibault, H. (2019). Relationships between emotional disorders, personality dimensions, and binge eating disorder in French obese adolescents. *Archives de Pédiatrie, 26*(3), 138-144. <https://doi.org/10.1016/j.arcped.2019.02.008>
- Cashwell, C. S., Giordano, A. L., King, K., Lankford, C., & Henson, R. K. (2017). Emotion regulation and sex addiction among college students. *International Journal of Mental Health and Addiction, 15*(1), 16-27. <https://doi.org/10.1007/s11469-016-9646-6>
- Castejón Martínez, M. Á., & Berengüí Gil, R. (2019). Personality differences and psychological variables related to risk for eating disorders. *Annals of Psychology, 36*(1), 64-73. <https://doi.org/10.6018/analesps.361951>

- Castella, K. D., Goldin, P., Jazaieri, H., Ziv, M., Dweck, C. S., & Gross, J. J. (2013). Beliefs about emotion: Links to emotion regulation, well-being, and psychological distress. *Basic and Applied Social Psychology, 35*(6), 497-505.
<https://doi.org/10.1080/01973533.2013.840632>
- Castellini, G., Lelli, L., Ricca, V., & Maggi, M. (2016). Sexuality in eating disorders patients: Etiological factors, sexual dysfunction and identity issues. A systematic review. *Hormone Molecular Biology and Clinical Investigation, 25*(2), 71-90.
<https://doi.org/10.1515/hmbci-2015-0055>
- Chao, A. M., Shaw, J. A., Pearl, R. L., Alamuddin, N., Hopkins, C. M., Bakizada, Z. M., ... & Wadden, T. A. (2017). Prevalence and psychosocial correlates of food addiction in persons with obesity seeking weight reduction. *Comprehensive Psychiatry, 73*, 97-104.
<https://doi.org/10.1016/j.comppsy.2016.11.009>
- Chen, G. M. (2015). Why do women bloggers use social media? Recreation and information motivations outweigh engagement motivations. *New Media & Society, 17*, 24-40.
<https://doi.org/10.1177/1461444813504269>
- Chen, L., Luo, X., Bóthe, B., Jiang, X., Demetrovics, Z., & Potenza, M. N. (2021). Properties of the Problematic Pornography Consumption Scale (PPCS-18) in community and subclinical samples in China and Hungary. *Addictive Behaviors, 112*, e106591.
<https://doi.org/10.1016/j.addbeh.2020.106591>
- Cheng, C., Lau, Y. C., Chan, L., & Luk, J. W. (2021). Prevalence of social media addiction across 32 nations: Meta-analysis with subgroup analysis of classification schemes and cultural values. *Addictive Behaviors, 117*, e106845.
<https://doi.org/10.1016/j.addbeh.2021.106845>
- Cheung, C. M., Chan, G. W., & Limayem, M. (2005). A critical review of online consumer behavior: Empirical research. *Journal of Electronic Commerce in Organizations, 3*(4),

1-19. <http://dx.doi.org/10.4018/jeco.2005100101>

- Chia, D. X., Ng, C. W., Kandasami, G., Seow, M. Y., Choo, C. C., Chew, P. K., ... & Zhang, M. W. (2020). Prevalence of internet addiction and gaming disorders in Southeast Asia: A meta-analysis. *International Journal of Environmental Research and Public Health*, *17*(7), 2582. <https://doi.org/10.3390/ijerph17072582>
- Choe, H. (2019). Eating together multimodally: Collaborative eating in mukbang, a Korean livestream of eating. *Language in Society*, *48*, 171-208. <https://doi.org/10.1017/S0047404518001355>
- Chou, C., & Hsiao, M. C. (2000). Internet addiction, usage, gratification, and pleasure experience: The Taiwan college students' case. *Computers & Education*, *35*(1), 65-80. [https://doi.org/10.1016/S0360-1315\(00\)00019-1](https://doi.org/10.1016/S0360-1315(00)00019-1)
- Chung, K. L., Morshidi, I., Yoong, L. C., & Thian, K. N. (2019). The role of the dark tetrad and impulsivity in social media addiction: Findings from Malaysia. *Personality and Individual Differences*, *143*, 62-67. <https://doi.org/10.1016/j.paid.2019.02.016>
- Ciarra, J. L., & Mathew, J. M. (2017). Social anxiety and disordered eating: The influence of stress reactivity and self-esteem. *Eating Behaviors*, *26*, 177-181. <https://doi.org/10.1016/j.eatbeh.2017.03.011>
- Cisler, J. M., Olatunji, B. O., Feldner, M. T., & Forsyth, J. P. (2010). Emotion regulation and the anxiety disorders: An integrative review. *Journal of Psychopathology and Behavioral Assessment*, *32*(1), 68-82. <https://doi.org/10.1007/s10862-009-9161-1>
- Clark, S. M., & Saules, K. K. (2013). Validation of the Yale Food Addiction Scale among a weight-loss surgery population. *Eating Behaviors*, *14*(2), 216-219. <https://doi.org/10.1016/j.eatbeh.2013.01.002>

- Claudat, K., White, E. K., & Warren, C. S. (2016). Acculturative stress, self-esteem, and eating pathology in Latina and Asian American female college students. *Journal of Clinical Psychology, 72*(1), 88-100. <https://doi.org/10.1002/jclp.22234>
- Cole, H., & Griffiths, M. D. (2007). Social interactions in massively multiplayer online role-playing gamers. *CyberPsychology & Behavior, 10*, 575-583. <https://doi.org/10.1089/cpb.2007.9988>
- Cole, T., Barrett, D. J., & Griffiths, M. D. (2011). Social facilitation in online and offline gambling: A pilot study. *International Journal of Mental Health and Addiction, 9*, 240-247. <https://doi.org/10.1007/s11469-010-9281-6>
- Colwell, S. R. (2016). The composite reliability calculator. *Technical Report*. Retrieved April 1, 2019, from: <http://www.thestatisticalmind.com/composite-reliability/>.
- Costa Jr, P. T., & McCrae, R. R. (1992). Four ways five factors are basic. *Personality and Individual Differences, 13*, 653-665. [https://doi.org/10.1016/0191-8869\(92\)90236-I](https://doi.org/10.1016/0191-8869(92)90236-I)
- Costa, S., Barberis, N., Griffiths, M. D., Benedetto, L., & Ingrassia, M. (2021). The love addiction inventory: Preliminary findings of the development process and psychometric characteristics. *International Journal of Mental Health and Addiction, 19*(3), 651-668. <https://doi.org/10.1007/s11469-019-00097-y>
- Couper, M. P. (2000). Web surveys: A review of issues and approaches. *Public Opinion Quarterly, 64*(4), 464-494.
- Creswell, J. W. (2014). *A concise introduction to mixed methods research*. Thousand Oaks, CA: Sage.
- Creswell, J. W., & Clark, V. L. P. (2017). *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage.
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage.

- Csibi, S., Griffiths, M. D., Demetrovics, Z., & Szabo, A. (2021). Analysis of problematic smartphone use across different age groups within the 'components model of addiction'. *International Journal of Mental Health and Addiction, 19*(3), 616-631.
<https://doi.org/10.1007/s11469-019-00095-0>
- Cyders, M. A., Littlefield, A. K., Coffey, S., & Karyadi, K. A. (2014). Examination of a short English version of the UPPS-P Impulsive Behavior Scale. *Addictive Behaviors, 39*(9), 1372-1376. <https://doi.org/10.1016/j.addbeh.2014.02.013>
- d'Acremont, M., & Van der Linden, M. (2007). How is impulsivity related to depression in adolescence? Evidence from a French validation of the cognitive emotion regulation questionnaire. *Journal of Adolescence, 30*(2), 271-282.
<https://doi.org/10.1016/j.adolescence.2006.02.007>
- Daudt, H. M., van Mossel, C., & Scott, S. J. (2013). Enhancing the scoping study methodology: A large, inter-professional team's experience with Arksey and O'Malley's framework. *BMC Medical Research Methodology, 13*, e48. <https://doi.org/10.1186/1471-2288-13-48>
- Davis, C. (2017). A commentary on the associations among 'food addiction', binge eating disorder, and obesity: Overlapping conditions with idiosyncratic clinical features. *Appetite, 115*, 3-8. <https://doi.org/10.1016/j.appet.2016.11.001>
- Davis, R. A. (2001). A cognitive-behavioral model of pathological Internet use. *Computers in Human Behavior, 17*(2), 187-195. [https://doi.org/10.1016/S0747-5632\(00\)00041-8](https://doi.org/10.1016/S0747-5632(00)00041-8)
- Davis, R. A., Flett, G. L., & Besser, A. (2002). Validation of a new scale for measuring problematic Internet use: Implications for pre-employment screening. *CyberPsychology & Behavior, 5*, 331-345. <https://doi.org/10.1089/109493102760275581>
- Davis, K., Drey, N., & Gould, D. (2009). What are scoping studies? A review of the nursing literature. *International Journal of Nursing Studies, 46*, 1386-1400.
<https://doi.org/10.1016/j.ijnurstu.2009.02.010>

- de Bérail, P., Guillon, M., & Bungener, C. (2019). The relations between YouTube addiction, social anxiety and parasocial relationships with YouTubers: A moderated-mediation model based on a cognitive-behavioral framework. *Computers in Human Behavior, 99*, 190-204. <https://doi.org/10.1016/j.chb.2019.05.007>
- DeJong, H., Oldershaw, A., Sternheim, L., Samarawickrema, N., Kenyon, M. D., Broadbent, H., ... & Schmidt, U. (2013). Quality of life in anorexia nervosa, bulimia nervosa and eating disorder not-otherwise-specified. *Journal of Eating Disorders, 1*(1), 1-8. <https://doi.org/10.1186/2050-2974-1-43>
- Demetrovics, Z., Urbán, R., Nagygyörgy, K., Farkas, J., Zilahy, D., Mervó, B., Reindl, A., Agoston, C., Kertesz, A., & Harmath, E. (2011). Why do you play? The development of the motives for online gaming questionnaire (MOGQ). *Behavior Research Methods, 43*, 814-825. <https://doi.org/10.3758/s13428-011-0091-y>
- Demircioğlu, Z. I., & Köse, A. G. (2018). Effects of attachment styles, dark triad, rejection sensitivity, and relationship satisfaction on social media addiction: A mediated model. *Current Psychology, 40*, 414-428. <https://doi.org/10.1007/s12144-018-9956-x>
- Deng, X., & Zhang, L. (2020). Neural underpinnings of the relationships between sensation seeking and emotion regulation in adolescents. *International Journal of Psychology, 55*(5), 851-860. <https://doi.org/10.1002/ijop.12649>
- Di Blasi, M., Giardina, A., Coco, G. L., Giordano, C., Billieux, J., & Schimmenti, A. (2020). A compensatory model to understand dysfunctional personality traits in problematic gaming: The role of vulnerable narcissism. *Personality and Individual Differences, 160*, e109921. <https://doi.org/10.1016/j.paid.2020.109921>
- Dingemans, A. E., Bruna, M. J., & Van Furth, E. F. (2002). Binge eating disorder: A review. *International Journal of Obesity, 26*(3), 299-307. <https://doi.org/10.1038/sj.ijo.0801949>

- Dinkler, L., & Bryant-Waugh, R. (2021). Assessment of avoidant restrictive food intake disorder, pica and rumination disorder: Interview and questionnaire measures. *Current Opinion in Psychiatry*, 34(6), 532-542.
<https://doi.org/10.1097/YCO.0000000000000736>
- DiStefano, C., & Hess, B. (2005). Using confirmatory factor analysis for construct validation: An empirical review. *Journal of Psychoeducational Assessment*, 23(3), 225-241.
<https://doi.org/10.1177/073428290502300303>
- Dittmar, H. (2005). Compulsive buying—a growing concern? An examination of gender, age, and endorsement of materialistic values as predictors. *British Journal of Psychology*, 96(4), 467-491. <https://doi.org/10.1348/000712605X53533>
- Dohle, S., Diel, K., & Hofmann, W. (2018). Executive functions and the self-regulation of eating behavior: A review. *Appetite*, 124, 4-9.
<https://doi.org/10.1016/j.appet.2017.05.041>
- Donnar, G. (2017). ‘Food porn’ or intimate sociality: Committed celebrity and cultural performances of overeating in meokbang. *Celebrity Studies*, 8, 122-127.
<https://doi.org/10.1080/19392397.2016.1272857>
- Dowling, N. A. (2014). Issues raised by the DSM-5 internet gaming disorder classification and proposed diagnostic criteria. *Addiction*, 109(9), 1408-1409.
<https://doi.org/10.1111/add.12554>
- Downe-Wambolt, B. (1992). Content analysis: Method, applications and issues. *Health Care for Women International*, 13(3), 313–321. <https://doi.org/10.1080/07399339209516006>
- Dumitru, D. C., Dumitru, T., & Maher, A. J. (2018). A systematic review of exercise addiction: Examining gender differences. *Journal of Physical Education and Sport*, 18(3), 1738-1747. <https://doi.org/10.7752/jpes.2018.03253>

- Duroy, D., Gorse, P., & Lejoyeux, M. (2014). Characteristics of online compulsive buying in Parisian students. *Addictive Behaviors, 39*(12), 1827-1830.
<https://doi.org/10.1016/j.addbeh.2014.07.028>
- Edwards, C. H., Johnson, A. A., Knight, E. M., Oyemade, U. J., Cole, O. J., Westney, O. E., Jones, S., Laryea, H., & Westney, L. S. (1994). Pica in an urban environment. *Journal of Nutrition, 124*, 954-962. https://doi.org/10.1093/jn/124.suppl_6.954S
- Effertz, T., Bischof, A., Rumpf, H. J., Meyer, C., & John, U. (2018). The effect of online gambling on gambling problems and resulting economic health costs in Germany. *The European Journal of Health Economics, 19*(7), 967-978. <https://doi.org/10.1007/s10198-017-0945-z>
- Eichen, D. M., Lent, M. R., Goldbacher, E., & Foster, G. D. (2013). Exploration of “food addiction” in overweight and obese treatment-seeking adults. *Appetite, 67*, 22-24.
<https://doi.org/10.1016/j.appet.2013.03.008>
- Ekşi, H., Turgut, T., & Sevim, E. (2019). The mediating role of general procrastination behaviors in the relationship between self-control and social media addiction in university students. *Addicta: The Turkish Journal on Addictions, 6*, 717-745.
<http://dx.doi.org/10.15805/addicta.2019.6.3.0069>
- Elhai, J. D., Vasquez, J. K., Lustgarten, S. D., Levine, J. C., & Hall, B. J. (2018a). Proneness to boredom mediates relationships between problematic smartphone use with depression and anxiety severity. *Social Science Computer Review, 36*, 707-720.
<https://doi.org/10.1177/0894439317741087>
- Elhai, J. D., Tiamiyu, M., & Weeks, J. (2018b). Depression and social anxiety in relation to problematic smartphone use: The prominent role of rumination. *Internet Research, 28*, 315-332. <http://dx.doi.org/10.1108/IntR-01-2017-0019>

- Elhai, J. D., Levine, J. C., O'Brien, K. D., & Armour, C. (2018c). Distress tolerance and mindfulness mediate relations between depression and anxiety sensitivity with problematic smartphone use. *Computers in Human Behavior, 84*, 477-484.
<https://doi.org/10.1016/j.chb.2018.03.026>
- Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing, 62*(1), 107-115. <https://doi.org/10.1111/j.1365-2648.2007.04569.x>
- Emelin V. A., Emelina, V. A., & Rasskazovaa, E. I. (2017). Technology-related transformations of imaginary body boundaries: Psychopathology of the everyday excessive Internet and mobile phone use. *Psychology in Russia: State of the Art, 10*(3), 177-189. <http://dx.doi.org/10.11621/pir.2017.0312>
- Emirtekin, E., Balta, S., Sural, İ., Kircaburun, K., Griffiths, M. D., & Billieux, J. (2019). The role of childhood emotional maltreatment and body image dissatisfaction in problematic smartphone use among adolescents. *Psychiatry Research, 271*, 634-639.
<https://doi.org/10.1016/j.psychres.2018.12.059>
- Eskin, M. (2001). Adolescent loneliness, coping methods and the relationship of loneliness to suicidal behavior. *Clinical Psychiatry, 4*, 5-11.
- Evren, B., Evren, C., Dalbudak, E., Topcu, M., & Kutlu, N. (2018). Relationship of internet addiction severity with probable ADHD and difficulties in emotion regulation among young adults. *Psychiatry Research, 269*, 494-500.
<https://doi.org/10.1016/j.psychres.2018.08.112>
- Fam, J. Y. (2018). Prevalence of internet gaming disorder in adolescents: A meta-analysis across three decades. *Scandinavian Journal of Psychology, 59*(5), 524-531.
<https://doi.org/10.1111/sjop.12459>

- Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G* Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*, 1149-1160. <https://doi.org/10.3758/BRM.41.4.1149>
- Feehan, L. M., Beck, C. A., Harris, S. R., MacIntyre, D. L., & Li, L. C. (2011). Exercise prescription after fragility fracture in older adults: A scoping review. *Osteoporosis International*, *22*, 1289-1322. <https://doi.org/10.1007/s00198-010-1408-x>
- Feillet, F., Bocquet, A., Briend, A., Chouraqui, J. P., Darmaun, D., Frelut, M. L., Girardet, J. P., Guimber, D., Hankard, R., Lapillonne, A., Peretti, N., Roze, J. C., Simeoni, U., Turck, D., Dupont, C., & Comité de nutrition de la Société française de pédiatrie. (2019). Nutritional risks of ARFID (avoidant restrictive food intake disorders) and related behavior. *Archives de Pédiatrie*, *26*(7), 437-441. <https://doi.org/10.1016/j.arcped.2019.08.005>
- Fernandez, D. P., Tee, E. Y., & Fernandez, E. F. (2017). Do Cyber Pornography Use Inventory-9 scores reflect actual compulsivity in internet pornography use? Exploring the role of abstinence effort. *Sexual Addiction & Compulsivity*, *24*(3), 156-179. <https://doi.org/10.1080/10720162.2017.1344166>
- Fernie, B. A., Bharucha, Z., Nikčević, A. V., & Spada, M. M. (2017). The unintentional procrastination scale. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, *35*, 136-149. <https://doi.org/10.1007/s10942-016-0247-x>
- Fino, E., Humphries, M., Robertson, J., Orosz, G., & Griffiths, M. D. (2022). Factor structure, reliability and criterion-related validity of the English version of the Problematic Series Watching Scale. *BJPsych Open*, *8*(5), e160. <https://doi.org/10.1192/bjo.2022.561>
- Flayelle, M., Canale, N., Vögele, C., Karila, L., Maurage, P., & Billieux, J. (2019). Assessing binge-watching behaviors: Development and validation of the “Watching TV Series

- Motives” and “Binge-watching Engagement and Symptoms” questionnaires. *Computers in Human Behavior*, 90, 26-36. <https://doi.org/10.1016/j.chb.2018.08.022>
- Flayelle, M., Maurage, P., & Billieux, J. (2017). Toward a qualitative understanding of binge-watching behaviors: A focus group approach. *Journal of Behavioral Addictions*, 6(4), 457-471. <https://doi.org/10.1556/2006.6.2017.060>
- Flint, A. J., Gearhardt, A. N., Corbin, W. R., Brownell, K. D., Field, A. E., & Rimm, E. B. (2014). Food-addiction scale measurement in 2 cohorts of middle-aged and older women. *American Journal of Clinical Nutrition*, 99(3), 578-586. <https://doi.org/10.3945/ajcn.113.068965>
- Flisher, C. (2010). Getting plugged in: An overview of internet addiction. *Journal of Paediatrics and Child Health*, 46(10), 557-559. <https://doi.org/10.1111/j.1440-1754.2010.01879.x>
- Floyd, F. J., & Widaman, K. F. (1995). Factor analysis in the development and refinement of clinical assessment instruments. *Psychological Assessment*, 7(3), 286-299. <https://psycnet.apa.org/doi/10.1037/1040-3590.7.3.286>
- Folkman, S., & Lazarus, R. S. (1988). Coping as a mediator of emotion. *Journal of Personality and Social Psychology*, 54, 466-475. <https://psycnet.apa.org/doi/10.1037/0022-3514.54.3.466>
- Ford, J. K., MacCallum, R. C., & Tait, M. (1986). The application of exploratory factor analysis in applied psychology: A critical review and analysis. *Personnel Psychology*, 39(2), 291-314. <https://doi.org/10.1111/j.1744-6570.1986.tb00583.x>
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18, 39-50. <https://doi.org/10.1177/002224378101800104>

- Forte, G., Favieri, F., Tedeschi, D., & Casagrande, M. (2021). Binge-watching: Development and validation of the binge-watching addiction questionnaire. *Behavioral Sciences, 11*(2), e27. <https://doi.org/10.3390/bs11020027>
- Fredericks, D. W., Carr, J. E., & Williams, W. L. (1998). Overview of the treatment of rumination disorder for adults in a residential setting. *Journal of Behavior Therapy and Experimental Psychiatry, 29*(1), 31-40. [https://doi.org/10.1016/S0005-7916\(98\)00002-0](https://doi.org/10.1016/S0005-7916(98)00002-0)
- Gainsbury, S., & Wood, R. (2011). Internet gambling policy in critical comparative perspective: The effectiveness of existing regulatory frameworks. *International Gambling Studies, 11*(3), 309-323. <https://doi.org/10.1080/14459795.2011.619553>
- Galmiche, M., Déchelotte, P., Lambert, G., & Tavalacci, M. P. (2019). Prevalence of eating disorders over the 2000–2018 period: A systematic literature review. *American Journal of Clinical Nutrition, 109*(5), 1402-1413. <https://doi.org/10.1093/ajcn/nqy342>
- Gander, K. (2016). 10,000 calorie challenge: The YouTubers eating piles of food to impress their fans. *The Independent*, October 17, 2016. Retrieved October 16, 2019, from: <https://www.independent.co.uk/life-style/food-and-drink/youtube-10000-calorie-challenge-furious-pete-rob-lipsett-a7365041.html>
- Geng, J., Han, L., Gao, F., Jou, M., & Huang, C. C. (2018). Internet addiction and procrastination among Chinese young adults: A moderated mediation model. *Computers in Human Behavior, 84*, 320-333. <https://doi.org/10.1016/j.chb.2018.03.013>
- Gentles, S. J., Lokker, C., McKibbin, KA (2010). Health information technology to facilitate communication involving health care providers, caregivers, and pediatric patients: A scoping review. *Journal of Medical Internet Research, 12*(2), e22. <https://doi.org/10.2196/jmir.1390>

- Gearhardt, A. N., Roberto, C. A., Seamans, M. J., Corbin, W. R., & Brownell, K. D. (2013). Preliminary validation of the Yale Food Addiction Scale for children. *Eating Behaviors, 14*(4), 508-512. <https://doi.org/10.1016/j.eatbeh.2013.07.002>
- Gearhardt, A. N., White, M. A., Masheb, R. M., Morgan, P. T., Crosby, R. D., & Grilo, C. M. (2012). An examination of the food addiction construct in obese patients with binge eating disorder. *International Journal of Eating Disorders, 45*(5), 657-663. <https://doi.org/10.1002/eat.20957>
- Gearhardt, A., White, M. A., & Potenza, M. N. (2011). Binge eating disorder and food addiction. *Current Drug Abuse Reviews, 4*, 201–207. <https://doi.org/10.2174/1874473711104030201>
- Gerson, J., Plagnol, A. C., & Corr, P. J. (2016). Subjective well-being and social media use: Do personality traits moderate the impact of social comparison on Facebook? *Computers in Human Behavior, 63*, 813-822. <https://doi.org/10.1016/j.chb.2016.06.023>
- Gilbert, B. (2018). YouTube now has over 1.8 billion users every month, within spitting distance of Facebook's 2 billion. Retrieved April 1, 2019, from: <https://www.businessinsider.com/youtube-user-statistics-2018-5>.
- Gillespie, S. L. (2019). *Watching women eat: A critique of magical eating and mukbang videos* (Doctoral dissertation). Retrieved 16 October, 2019, from: https://scholarworks.unr.edu/bitstream/handle/11714/6027/Gillespie_unr_0139M_12971.pdf?sequence=1
- González-Cabrera, J., Machimbarrena, J. M., Beranuy, M., Pérez-Rodríguez, P., Fernández-González, L., & Calvete, E. (2020). Design and measurement properties of the Online Gambling Disorder Questionnaire (OGD-Q) in Spanish adolescents. *Journal of Clinical Medicine, 9*(1), e120. <https://doi.org/10.3390/jcm9010120>

- Gosling, S. D., & Mason, W. (2015). Internet research in psychology. *Annual Review of Psychology*, 66, 877-902. <https://doi.org/10.1146/annurev-psych-010814-015321>
- Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today*, 24(2), 105-112. <https://doi.org/10.1016/j.nedt.2003.10.001>
- Granero, R., Hilker, I., Agüera, Z., Jiménez-Murcia, S., Sauchelli, S., Islam, M. A., Fagundo, A. B., Sánchez, I., Riesco, N., Dieguez, C., Soriano, J., Salcedo-Sánchez, C., Casanueva, F. F., De la Torre, R., Menchón, J. M., Gearhardt, A. N., & Fernández-Aranda, F. (2014). Food addiction in a Spanish sample of eating disorders: DSM-5 diagnostic subtype differentiation and validation data. *European Eating Disorders Review*, 22(6), 389-396. <https://doi.org/10.1002/erv.2311>
- Grant, B. (2015). Meet South Korea's binge eating TV stars: Thousands of 'lonely' viewers tune in to watch young women gorge on enough food to feed a family in one sitting. *Daily Mail*, October 20, 2015. Retrieved October 16, 2019, from: <https://www.dailymail.co.uk/news/article-3280245/Meet-South-Korea-s-binge-eating-TV-stars-Thousands-mukbang-viewers-tune-watch-young-women-eat-food-feed-family-one-sitting.html>
- Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment*, 26(1), 41-54. <https://doi.org/10.1023/B:JOBA.0000007455.08539.94>
- Greatrex, C. (2016). Britain's first 'Mukbang' star reveals how she binge eats KFC and Five Guys on camera and stays healthy. *Daily Mirror*, July 26, 2016. Retrieved October 16, 2019, from: <https://www.mirror.co.uk/news/real-life-stories/britains-first-mukbang-star-reveals-8491536>

- Griffiths, M. (1996). Gambling on the Internet: A brief note. *Journal of Gambling Studies*, 12, 471-474. <https://doi.org/10.1007/BF01539190>
- Griffiths, M. (1999). Internet addiction: Fact or fiction? *The Psychologist*, 12(5), 246–250.
- Griffiths, M. (2005). A ‘components’ model of addiction within a biopsychosocial framework. *Journal of Substance Use*, 10(4), 191-197. <https://doi.org/10.1080/14659890500114359>
- Griffiths, M. D. (2010). The role of context in online gaming excess and addiction: Some case study evidence. *International Journal of Mental Health and Addiction*, 8(1), 119-125. <https://doi.org/10.1007/s11469-009-9229-x>
- Griffiths, M. D. (2012). Internet sex addiction: A review of empirical research. *Addiction Research & Theory*, 20(2), 111-124. <https://doi.org/10.3109/16066359.2011.588351>
- Griffiths, M. D. (2017). Behavioural addiction and substance addiction should be defined by their similarities not their dissimilarities. *Addiction*, 112(10), 1718-1720. <http://doi.org/10.1111/add.13828>
- Griffiths, M. D. (2018). Adolescent social networking: How do social media operators facilitate habitual use? *Education and Health*, 36, 66-69.
- Griffiths, M. D. (2019). The evolution of the components model of addiction and the need for a confirmatory approach in conceptualizing behavioral addictions. *Düşünen Adam: The Journal of Psychiatry and Neurological Sciences*, 32, 179-184. <https://doi.org/10.14744/DAJPNS.2019.00027>
- Griffiths, M. D., Andreassen, C. S., Pallesen, S., Bilder, R. M., Torsheim, T., & Aboujaoude, E. (2016). When is a new scale not a new scale? The case of the Bergen Shopping Addiction Scale and the Compulsive Online Shopping Scale. *International Journal of Mental Health and Addiction*, 14(6), 1107-1110. <https://doi.org/10.1007/s11469-016-9711-1>

- Griffiths, M. D., Kuss, D. J., & Demetrovics, Z. (2014). Social networking addiction: An overview of preliminary findings. In K. Rosenberg & L. Feder (Eds.), *Behavioral addictions: Criteria, evidence and treatment* (pp. 119-141). New York: Elsevier.
- Griffiths, M. D, Kuss, D. J, & King, D. L. (2012). Video game addiction: Past, present and future. *Current Psychiatry Reviews*, 8(4), 308-318.
<https://doi.org/10.2174/157340012803520414>
- Griffiths, M., Wardle, H., Orford, J., Sproston, K., & Erens, B. (2011). Internet gambling, health, smoking and alcohol use: Findings from the 2007 British Gambling Prevalence Survey. *International Journal of Mental Health and Addiction*, 9(1), 1-11.
<https://doi.org/10.1007/s11469-009-9246-9>
- Grubbs, J. B., Hoagland, K. C., Lee, B. N., Grant, J. T., Davison, P., Reid, R. C., & Kraus, S. W. (2020). Sexual addiction 25 years on: A systematic and methodological review of empirical literature and an agenda for future research. *Clinical Psychology Review*, 82, e101925. <https://doi.org/10.1016/j.cpr.2020.101925>
- Grubbs, J. B., Kraus, S. W., & Perry, S. L. (2019). Self-reported addiction to pornography in a nationally representative sample: The roles of use habits, religiousness, and moral incongruence. *Journal of Behavioral Addictions*, 8(1), 88-93.
<https://doi.org/10.1556/2006.7.2018.134>
- Gull, W. W. (1874). Anorexia nervosa (apepsia hysterica, anorexia hysterica). *Transactions of the Clinical Society of London*, 7, 22-28.
<https://doi.org/10.1080/21662630.2015.1079694>
- Günüç, S., & Keskin, A. D. (2016). Online shopping addiction: Symptoms, causes and effects. *Addicta: The Turkish Journal on Addictions*, 3(3), 353-364.
<http://dx.doi.org/10.15805/addicta.2016.3.0104>

- Hakimey, H., & Yazdanifard, R. (2015). The review of Mokbang (broadcast eating) phenomena and its relations with South Korean culture and society. *International Journal of Management, Accounting and Economics*, 2, 443-455.
<https://dorl.net/dor/20.1001.1.23832126.2015.2.5.8.3>
- Håkansson, A. (2013). Portal of research methods and methodologies for research projects and degree projects. *The 2013 World Congress in Computer Science, Computer Engineering, and Applied Computing WORLDCOMP 2013; Las Vegas, Nevada, USA, 22-25 July* (pp. 67-73). CSREA Press USA.
- Hanson, W., Creswell J., Plano Clark, V., Petska, K., & Creswell, J. (2005). Mixed-methods research designs in counseling psychology. *Journal of Counseling Psychology*, 52(2), 224-235. <https://psycnet.apa.org/doi/10.1037/0022-0167.52.2.224>
- Hartmann, A. S., Becker, A. E., Hampton, C., & Bryant-Waugh, R. (2012). Pica and rumination disorder in DSM-5. *Psychiatric Annals*, 42(11), 426-430.
<https://doi.org/10.3928/00485713-20121105-09>
- Hauck, C., Weiß, A., Schulte, E. M., Meule, A., & Ellrott, T. (2017). Prevalence of 'food addiction' as measured with the Yale Food Addiction Scale 2.0 in a representative German sample and its association with sex, age and weight categories. *Obesity Facts*, 10, 12–24. <https://doi.org/10.1159/000456013>
- Hawthorne, E. (2019). Mukbang: Could the obsession with watching people eat be a money spinner for brands? Retrieved 21 October, 2019, from:
<https://www.thegrocer.co.uk/marketing/mukbang-could-the-obsession-with-watching-people-eat-be-a-money-spinner-for-brands/596698.article>
- Hay, P., Mitchison, D., Collado, A. E. L., González-Chica, D. A., Stocks, N., & Touyz, S. (2017). Burden and health-related quality of life of eating disorders, including

- Avoidant/Restrictive Food Intake Disorder (ARFID), in the Australian population. *Journal of Eating Disorders*, 5(1), 1-10. <https://doi.org/10.1186/s40337-017-0149-z>
- Hay, P., & Touyz, S. (2018). Classification challenges in the field of eating disorders: can severe and enduring anorexia nervosa be better defined?. *Journal of Eating Disorders*, 6(1), 1-3. <https://doi.org/10.1186/s40337-018-0229-8>
- Hayes, A. F., & Coutts, J. J. (2020). Use omega rather than Cronbach's alpha for estimating reliability. But.... *Communication Methods and Measures*, 14(1), 1-24. <https://doi.org/10.1080/19312458.2020.1718629>
- Hays, R. D., & DiMatteo, M. R. (1987). A short-form measure of loneliness. *Journal of Personality Assessment*, 51, 69-81.
- Hebebrand, J., Albayrak, Ö., Adan, R., Antel, J., Dieguez, C., De Jong, J., Leng, G., Menzies, J., Mercer, J. G., Murphy, M., Van Der Plasse, G., & Dickson, S. L. (2014). "Eating addiction", rather than "food addiction", better captures addictive-like eating behavior. *Neuroscience & Biobehavioral Reviews*, 47, 295-306. <https://doi.org/10.1016/j.neubiorev.2014.08.016>
- Heffernan, T., Hamilton, C., & Neave, N. (2022). Compulsive shopping behaviour and executive dysfunction in young adults. *Applied Neuropsychology: Adult*. Advance online publication. <https://doi.org/10.1080/23279095.2021.2013846>
- Henry, J. D., & Crawford, J. R. (2005). The short-form version of the Depression Anxiety Stress Scales (DASS-21): Construct validity and normative data in a large non-clinical sample. *British Journal of Clinical Psychology*, 44(2), 227-239. <https://doi.org/10.1348/014466505X29657>
- Hermand, M., Benyamina, A., Donnadieu-Rigole, H., Petillion, A., Amirouche, A., Roméo, B., & Karila, L. (2020). Addictive use of online sexual activities and its comorbidities: A systematic review. *Current Addiction Reports*, 7(2), 194-209.

<https://doi.org/10.1007/s40429-020-00301-3>

- Hernández, C., Ottenberger, D. R., Moessner, M., Crosby, R. D., & Ditzen, B. (2019). Depressed and swiping my problems for later: The moderation effect between procrastination and depressive symptomatology on internet addiction. *Computers in Human Behavior*, *97*, 1-9. <https://doi.org/10.1016/j.chb.2019.02.027>
- Hickey, G., & Kipping, C. (1996). Issues in research. A multi-stage approach to the coding of data from open-ended questions. *Nurse Researcher*, *4*(1), 81–91. <https://doi.org/10.7748/nr.4.1.81.s9>
- Hicks, A. (2019). Vlogger dies live-streaming himself eating poisonous centipedes and lizards. *Daily Mirror*, July 24, 2019. Retrieved October 16, 2019, from: https://www.mirror.co.uk/news/world-news/man-35-dies-live-streaming-18763663_
- Higgs, S. (2015). Social norms and their influence on eating behaviours. *Appetite*, *86*, 38-44. <https://doi.org/10.1016/j.appet.2014.10.021>
- Hill, L. S., Reid, F., Morgan, J. F., & Lacey, J. H. (2010). SCOFF, the development of an eating disorder screening questionnaire. *International Journal of Eating Disorders*, *43*, 344-351. <https://doi.org/10.1002/eat.20679>
- Hing, N., Cherney, L., Gainsbury, S. M., Lubman, D. I., Wood, R. T., & Blaszczynski, A. (2015). Maintaining and losing control during Internet gambling: A qualitative study of gamblers' experiences. *New Media & Society*, *17*(7), 1075-1095. <https://doi.org/10.1177/1461444814521140>
- Hirschman, E. C. (1992). The consciousness of addiction: Toward a general theory of compulsive consumption. *Journal of Consumer Research*, *19*(2), 155-179. <https://doi.org/10.1086/209294>

- Hong, S. & Park, S. (2018). Internet mukbang (foodcasting) in South Korea. In I. Eleá, & L. Mikos (Eds.), *Young and creative: Digital technologies empowering children in everyday life* (pp. 111-125). Göteborg, Sweden: Nordicom.
- Horzum, M. B. (2016). Examining the relationship to gender and personality on the purpose of Facebook usage of Turkish university students. *Computers in Human Behavior*, *64*, 319-328. <https://doi.org/10.1016/j.chb.2016.06.010>
- Howitt, D., & Cramer, D. (2011). *Introduction to research methods in psychology* (3rd edition). Harlow: Pearson Education.
- Hsieh, H.-F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, *15*(9), 1277–1288.
<http://dx.doi.org/10.1177/1049732305276687>
- Hu, L. T. & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structural analysis: Conventional criteria versus new alternatives. *Structural Equation Modelling*, *6*, 1-55. <https://doi.org/10.1080/10705519909540118>
- Internet Live Stats. (2022). Internet users in the world. Retrieved August 12, 2022, from <https://www.internetlivestats.com/internet-users/>.
- Ioannidis, K., Hook, R., Wickham, K., Grant, J. E., & Chamberlain, S. R. (2019). Impulsivity in gambling disorder and problem gambling: A meta-analysis. *Neuropsychopharmacology*, *44*(8), 1354-1361. <https://doi.org/10.1038/s41386-019-0393-9>
- Islam, M.S, Rahman, M. E., Moonajilin, M. S., & Griffiths, M. D. (2020). Validation and evaluation of the psychometric properties of Bangla nine-item Internet Disorder Scale–Short Form. *Journal of Addictive Diseases*, *38*(4), 540-549.
<https://doi.org/10.1080/10550887.2020.1799134>

- Jackson, D. L., Gillaspay Jr, J. A., & Purc-Stephenson, R. (2009). Reporting practices in confirmatory factor analysis: an overview and some recommendations. *Psychological Methods, 14*(1), 6-23. <https://psycnet.apa.org/doi/10.1037/a0014694>
- Jameel, S., Shahnawaz, M. G., & Griffiths, M. D. (2019). Smartphone addiction in students: A qualitative examination of the components model of addiction using face-to-face interviews. *Journal of Behavioral Addictions, 8*(4), 780-793. <https://doi.org/10.1556/2006.8.2019.57>
- Javadi, M. H. M., Dolatabadi, H. R., Nourbakhsh, M., Poursaeedi, A., & Asadollahi, A. R. (2012). An analysis of factors affecting on online shopping behavior of consumers. *International Journal of Marketing Studies, 4*(5), 81-98. <http://dx.doi.org/10.5539/ijms.v4n5p81>
- Javaras, K. N., Pope, H. G., Lalonde, J. K., Roberts, J. L., Nillni, Y. I., Laird, N. M., Bulik, C. M., Crow, S. J., McElroy, S. L., Walsh, T., Tsuang, M. T., Rosenthal, N. R., & Hudson, J. I. (2008). Co-occurrence of binge eating disorder with psychiatric and medical disorders. *The Journal of Clinical Psychiatry, 69*(2), 266-273. <https://doi.org/10.4088/jcp.v69n0213>
- Jenging, R., Kumar, J. R., Sabri, P. N. M., & Mohamad, F. S. (2023). The Mukbang Phenomenon: Impact on Cognition and Physical Well-Being among Undergraduates. *International Journal of Advanced Psychology and Human Sciences, 4*(2), 77-93. <https://doi.org/10.33736/jcshd.4901.2022>
- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher, 33*(7), 14-26. <https://doi.org/10.3102/0013189X033007014>
- Joormann, J., & Stanton, C. H. (2016). Examining emotion regulation in depression: A review and future directions. *Behaviour Research and Therapy, 86*, 35-49.

<https://doi.org/10.1016/j.brat.2016.07.007>

Joseph, S., Linley, P. A., Harwood, J., Lewis, C. A., & McCollam, P. (2004). Rapid assessment of well-being: The Short Depression-Happiness Scale (SDHS). *Psychology and Psychotherapy: Theory, Research and Practice*, 77, 463-478.

<https://doi.org/10.1348/1476083042555406>

Joyal, C. C., Cossette, A., & Lapierre, V. (2015). What exactly is an unusual sexual fantasy? *Journal of Sexual Medicine*, 12, 328-340. <https://doi.org/10.1111/jsm.12734>

Kafka, M. P. (2010). Hypersexual disorder: A proposed diagnosis for DSM-V. *Archives of Sexual Behavior*, 39(2), 377-400. <https://doi.org/10.1007/s10508-009-9574-7>

Kakoschke, N., Aarts, E., & Verdejo-García, A. (2018). The cognitive drivers of compulsive eating behavior: A mini-review. *Frontiers in Behavioral Neuroscience*, 12, 338.

<https://doi.org/10.3389/fnbeh.2018.00338>

Kairouz, S., Paradis, C., & Nadeau, L. (2012). Are online gamblers more at risk than offline gamblers?. *Cyberpsychology, Behavior, and Social Networking*, 15(3), 175-180.

<https://doi.org/10.1089/cyber.2011.0260>

Kallio, H., Pietilä, A. M., Johnson, M., & Kangasniemi, M. (2016). Systematic methodological review: Developing a framework for a qualitative semi-structured interview guide. *Journal of Advanced Nursing*, 72(12), 2954-2965. <https://doi.org/10.1111/jan.13031>

Kanat-Maymon, Y., Almog, L., Cohen, R., & Amichai-Hamburger, Y. (2018). Contingent self-worth and Facebook addiction. *Computers in Human Behavior*, 88, 227-235.

<https://doi.org/10.1016/j.chb.2018.07.011>

Kandell, J. J. (1998). Internet addiction on campus: The vulnerability of college students. *Cyberpsychology & Behavior*, 1(1), 11-17. <https://doi.org/10.1089/cpb.1998.1.11>

- Kang, E., Lee, J., Kim, K. H., & Yun, Y. H. (2020). The popularity of eating broadcast: Content analysis of “mukbang” YouTube videos, media coverage, and the health impact of “mukbang” on public. *Health Informatics Journal*, *26*(3), 2237-2248.
<https://doi.org/10.1177/1460458220901360>
- Karazsia, B. T., Murnen, S. K., & Tylka, T. L. (2017). Is body dissatisfaction changing across time? A cross-temporal meta-analysis. *Psychological Bulletin*, *143*(3), 293-320.
<https://psycnet.apa.org/doi/10.1037/bul0000081>
- Kardefelt-Winther, D. (2014). A conceptual and methodological critique of internet addiction research: Towards a model of compensatory internet use. *Computers in Human Behavior*, *31*, 351-354. <https://doi.org/10.1016/j.chb.2013.10.059>
- Kardefelt-Winther, D., Heeren, A., Schimmenti, A., van Rooij, A., Maurage, P., Carras, M., ... & Billieux, J. (2017). How can we conceptualize behavioural addiction without pathologizing common behaviours? *Addiction*, *112*(10), 1709-1715.
<https://doi.org/10.1111/add.13763>
- Kavanagh, J., Trouton, A., Oakley, A., & Harden, A. (2005). *A scoping review of the evidence for incentive schemes to encourage positive health and other social behaviors in young people*. London: EPPI-Centre, Social Science Research Unit, Institute of Education.
- Kayış, A. R., Satıcı, S. A., Yılmaz, M. F., Şimşek, D., Ceyhan, E., & Bakioğlu, F. (2016). Big five-personality trait and internet addiction: A meta-analytic review. *Computers in Human Behavior*, *63*, 35-40. <https://doi.org/10.1016/j.chb.2016.05.012>
- Kenny, T. E., Singleton, C., & Carter, J. C. (2019). An examination of emotion-related facets of impulsivity in binge eating disorder. *Eating Behaviors*, *32*, 74-77.
<https://doi.org/10.1016/j.eatbeh.2018.12.006>
- Keski-Rahkonen, A. (2021). Epidemiology of binge eating disorder: Prevalence, course, comorbidity, and risk factors. *Current Opinion in Psychiatry*, *34*(6), 525-531.

<https://doi.org/10.1097/YCO.0000000000000750>

- Keski-Rahkonen, A., & Mustelin, L. (2016). Epidemiology of eating disorders in Europe: Prevalence, incidence, comorbidity, course, consequences, and risk factors. *Current Opinion in Psychiatry*, 29, 340–345. <https://doi.org/10.1097/YCO.0000000000000278>
- Keskin, A. D., & Günüç, S. (2017). Testing models regarding online shopping addiction. *Addicta: The Turkish Journal on Addictions*, 4(2), 221-242. <http://dx.doi.org/10.15805/addicta.2017.4.2.0010>
- Kesmodel, U. S. (2018). Cross-sectional studies – What are they good for? *Acta Obstetricia et Gynecologica Scandinavica*, 97(4), 388-393. <https://doi.org/10.1111/aogs.13331>
- Kessler, R. C., Berglund, P. A., Chiu, W. T., Deitz, A. C., Hudson, J. I., Shahly, V., ... & Xavier, M. (2013). The prevalence and correlates of binge eating disorder in the World Health Organization World Mental Health Surveys. *Biological Psychiatry*, 73(9), 904-914. <https://doi.org/10.1016/j.biopsych.2012.11.020>
- Khazaei, F., Khazaei, O., & Ghanbari-H, B. (2017). Positive psychology interventions for internet addiction treatment. *Computers in Human Behavior*, 72, 304-311. <https://doi.org/10.1016/j.chb.2017.02.065>
- Khumsri, J., Yingyeun, R., Manwong, M., Hanprathet, N., Phanasathit, M. (2015). Prevalence of Facebook addiction and related factors among Thai high school students. *Journal of Medical Association of Thailand*, 98(3), 51-60.
- Kim, J. H. (2018). Psychological issues and problematic use of smartphone: ADHD's moderating role in the associations among loneliness, need for social assurance, need for immediate connection, and problematic use of smartphone. *Computers in Human Behavior*, 80, 390-398. <https://doi.org/10.1016/j.chb.2017.11.025>

- Kim, M. (2017). Extreme eating: Are “mukbangs” helpful or hurtful to those with eating disorders. Retrieved April 1, 2019, from: <http://www.hcs.harvard.edu/~hcht/blog/eating-disorder>.
- Kim, J. S., Hart, R. J., & An, H. J. (2017). The effect of reality program viewing motivation on outdoor recreation behavioral intention: Focusing on the Korean travel reality program “Dad! Where are we going?”. *International Journal of Tourism and Hospitality Research*, 31, 33-43. <https://doi.org/10.21298/IJTHR.2017.10.31.10.33>
- Kim, M. G., & Kim, J. (2010). Cross-validation of reliability, convergent and discriminant validity for the problematic online game use scale. *Computers in Human Behavior*, 26(3), 389-398. <https://doi.org/10.1016/j.chb.2009.11.010>
- Kim, D. J., Kim, K., Lee, H. W., Hong, J. P., Cho, M. J., Fava, M., ... & Jeon, H. J. (2017). Internet game addiction, depression, and escape from negative emotions in adulthood: A nationwide community sample of Korea. *Journal of Nervous and Mental Disease*, 205, 568-573. <https://doi.org/10.1097/NMD.0000000000000698>
- King, D. L., Delfabbro, P. H., & Zajac, I. T. (2011). Preliminary validation of a new clinical tool for identifying problem video game playing. *International Journal of Mental Health and Addiction*, 9(1), 72-87. <https://doi.org/10.1007/s11469-009-9254-9>
- King, K. M., Feil, M. C., & Halvorson, M. A. (2018). Negative urgency is correlated with the use of reflexive and disengagement emotion regulation strategies. *Clinical Psychological Science*, 6(6), 822-834. <https://doi.org/10.1177/2167702618785619>
- Király, O., Griffiths, M. D., Urbán, R., Farkas, J., Kökönyei, G., Elekes, Z., Tamás, D., & Demetrovics, Z. (2014). Problematic Internet use and problematic online gaming are not the same: Findings from a large nationally representative adolescent sample. *Cyberpsychology, Behavior, and Social Networking*, 17(12), 749-754. <https://doi.org/10.1089/cyber.2014.0475>

- Király, O., Urbán, R., Griffiths, M. D., Ágoston, C., Nagygyörgy, K., Kökönyei, G., & Demetrovics, Z. (2015). The mediating effect of gaming motivation between psychiatric symptoms and problematic online gaming: An online survey. *Journal of Medical Internet Research, 17*, e88. <https://doi.org/10.2196/jmir.3515>
- Kircaburun, K., Alhabash, S., Tosuntaş, Ş. B., & Griffiths, M. D. (2020). Uses and gratifications of problematic social media use among university students: A simultaneous examination of the Big Five of personality traits, social media platforms, and social media use motives. *International Journal of Mental Health and Addiction, 18*(3), 525-547. <https://doi.org/10.1007/s11469-018-9940-6>
- Kircaburun, K., Balta, S., Emirtekin, E., Tosuntas, Ş. B., Demetrovics, Z., & Griffiths, M. D. (2021c). Compensatory usage of the internet: The case of mukbang watching on YouTube. *Psychiatry Investigation, 18*, 269-276. <https://doi.org/10.30773/pi.2019.0340>
- Kircaburun, K., & Griffiths, M. D. (2018a). The dark side of internet: Preliminary evidence for the associations of dark personality traits with specific online activities and problematic internet use. *Journal of Behavioral Addictions, 7*(4), 993-1003. <https://doi.org/10.1556/2006.7.2018.109>
- Kircaburun, K. & Griffiths, M. D. (2018b). Instagram addiction and the big five of personality: The mediating role of self-liking. *Journal of Behavioral Addictions, 7*, 158-170. <https://doi.org/10.1556/2006.7.2018.15>
- Kircaburun, K., & Griffiths, M. D. (2019). Problematic Instagram use: The role of perceived feeling of presence and escapism. *International Journal of Mental Health and Addiction, 17*(4), 909-921. <https://doi.org/10.1007/s11469-018-9895-7>
- Kircaburun, K., Griffiths, M. D., & Billieux, J. (2019). Trait emotional intelligence and problematic online behaviors among adolescents: The mediating role of mindfulness,

ruminatıon, and depression. *Personality and Individual Differences*, 139, 208-213.

<https://doi.org/10.1016/j.paid.2018.11.024>

Kircaburun, K., Griffiths, M. D., Şahin, F., Bahtiyar, M., Atmaca, T., & Tosuntaş, Ş. B. (2020).

The mediating role of self/everyday creativity and depression on the relationship between creative personality traits and problematic social media use among emerging adults.

International Journal of Mental Health and Addiction, 18(1), 77-88.

<https://doi.org/10.1007/s11469-018-9938-0>

Kircaburun, K., Harris, A., Calado, F., & Griffiths, M. D. (*in review*). Development and

validation of Problematic Mukbang Watching Scale and Mukbang Watching Motives

Scale: A cross-sectional study with adult mukbang watchers.

Kircaburan, K., Harris, A., Calado, F., & Griffiths, M.D (2020). The association of addictive

mukbang watching with mukbang watching motives, emotion regulation, impulsivity, and psychiatric distress. *Journal of Concurrent Disorders*, 2(2), 16-22.

<https://doi.org/10.54127/XQLF8386>

Kircaburun, K., Harris, A., Calado, F., & Griffiths, M. D. (2021a). The psychology of mukbang

watching: A scoping review of the academic and non-academic literature. *International*

Journal of Mental Health and Addiction, 19, 1190-1213. [https://doi.org/10.1007/s11469-](https://doi.org/10.1007/s11469-019-00211-0)

[019-00211-0](https://doi.org/10.1007/s11469-019-00211-0)

Kircaburun, K., Jonason, P. K., & Griffiths, M. D. (2018). The Dark Tetrad traits and

problematic online gaming: The mediating role of online gaming motives and moderating role of game types. *Personality and Individual Differences*, 135, 298-303.

<https://doi.org/10.1016/j.paid.2018.07.038>

Kircaburun, K., Kokkinos, C. M., Demetrovics, Z., Király, O., Griffiths, M. D., & Çolak, T. S.

(2019). Problematic online behaviors among adolescents and emerging adults:

- Associations between cyberbullying perpetration, problematic social media use and psychosocial factors. *International Journal of Mental Health and Addiction*, 17, 891-908.
<https://doi.org/10.1007/s11469-018-9894-8>
- Kircaburun, K., March, E., Balta, S., Emirtekin, E., Kışla, T., & Griffiths, M. D. (2022a). The role of procrastination between personality traits and addictive mukbang watching among emerging adults. *SAGE Open*. Advanced online publication.
<https://doi.org/10.1177/21582440221085006>
- Kircaburun, K., Savcı, M., Emirtekin, E., & Griffiths, M. D. (2022b). Uses and gratifications of problematic mukbang watching – The role of eating and social gratification: A pilot study. *Journal of Psychiatric Research*, 146, 28-30.
<https://doi.org/10.1016/j.jpsychires.2021.12.036>
- Kircaburun, K., Stavropoulos, V., Harris, A., Calado, F., Emirtekin, E., & Griffiths, M. D. (2021b). Development and validation of the mukbang addiction scale. *International Journal of Mental Health and Addiction*, 19, 1031-1044. <https://doi.org/10.1007/s11469-019-00210-1>
- Kircaburun, K., Üñübol, H., Sayar, G. H., Stavropoulos, V., & Griffiths, M. D. (2020). Measurement, prevalence, and psychological risk factors associated with addictive food consumption: Development of a new food addiction scale and evidence from a national largescale sample. *Journal of Behavioral Addictions*, 9(3), 836-852.
<https://doi.org/10.1556/2006.2020.00052>
- Kircaburun, K., Yurdagül, C., Kuss, D., Emirtekin, E., & Griffiths, M. D. (2021d). Problematic mukbang watching and its relationship to disordered eating and internet addiction: A pilot study among emerging adult mukbang watchers. *International Journal of Mental Health and Addiction*, 19, 2160–2169. <https://doi.org/10.1007/s11469-020-00309-w>

- Kirezli, Ö., & Arslan, F. M. (2019). Analyzing motivational determinants of shopping addiction tendency. *Ege Academic Review*, *19*(1), 61-74.
<https://doi.org/10.21121/eab.2019148775>
- Klatzkin, R. R., Gaffney, S., Cyrus, K., Bigus, E., & Brownley, K. A. (2018). Stress-induced eating in women with binge-eating disorder and obesity. *Biological Psychology*, *131*, 96-106. <https://doi.org/10.1016/j.biopsycho.2016.11.002>
- Kline, R. B. (2011). *Principles and practices of structural equation modeling* (2nd ed.). New York: Guilford.
- Kline, R. B. (2015). The mediation myth. *Basic and Applied Social Psychology*, *37*, 202-213.
- Klobas, J. E., McGill, T. J., Moghavvemi, S., & Paramanathan, T. (2018). Compulsive YouTube usage: A comparison of use motivation and personality effects. *Computers in Human Behavior*, *87*, 129-139. <https://doi.org/10.1016/j.chb.2018.05.038>
- Klobas, J. E., McGill, T. J., Moghavvemi, S., & Paramanathan, T. (2019). Problematic and extensive YouTube use: First hand reports. *Online Information Review*, *43*(2), 265-282.
<https://doi.org/10.1108/OIR-01-2018-0032>
- Ko, Y. M., Roh, S., & Lee, T. K. (2020). The association of problematic internet shopping with dissociation among South Korean internet users. *International Journal of Environmental Research and Public Health*, *17*(9), 3235. <https://doi.org/10.3390/ijerph17093235>
- Kohut, T., & Štulhofer, A. (2018). The role of religiosity in adolescents' compulsive pornography use: A longitudinal assessment. *Journal of Sex & Marital Therapy*, *44*(8), 759-775. <https://doi.org/10.1080/0092623X.2018.1466012>
- Kor, A., Zilcha-Mano, S., Fogel, Y. A., Mikulincer, M., Reid, R. C., & Potenza, M. N. (2014). Psychometric development of the problematic pornography use scale. *Addictive Behaviors*, *39*, 861-868. <https://doi.org/10.1016/j.addbeh.2014.01.027>

- Koran, L. M., Faber, R. J., Aboujaoude, E., Large, M. D., & Serpe, R. T. (2006). Estimated prevalence of compulsive buying behavior in the United States. *American Journal of Psychiatry, 163*(10), 1806-1812. <https://doi.org/10.1176/ajp.2006.163.10.1806>
- Kostro, K., Lerman, J. B., & Attia, E. (2014). The current status of suicide and self-injury in eating disorders: A narrative review. *Journal of Eating Disorders, 2*(1), 1-9. <https://doi.org/10.1186/s40337-014-0019-x>
- Kraus, S. W., Gola, M., Grubbs, J. B., Kowalewska, E., Hoff, R. A., Lew-Starowicz, M., ... & Potenza, M. N. (2020). Validation of a brief pornography screen across multiple samples. *Journal of Behavioral Addictions, 9*(2), 259-271. <https://doi.org/10.1556/2006.2020.00038>
- Krueger, R. A. & Casey, M.A. (2014). *Focus groups: A practical guide for applied research* (5th ed.). Thousand Oaks, CA: Sage.
- Kuss, D. J., Dunn, T. J., Wölfling, K., Müller, K. W., Hędzielek, M., & Marcinkowski, J. (2017). Excessive Internet use and psychopathology: The role of coping. *Clinical Neuropsychiatry: Journal of Treatment Evaluation, 14*(1), 73-81.
- Kuss, D.J. & Griffiths, M. D. (2012a). Internet gambling behavior. In Z. Yan (Ed.), *Encyclopedia of Cyber Behavior* (pp.735-753). Hershey, PA: IGI Global.
- Kuss, D. J., & Griffiths, M. D. (2012b). Internet gaming addiction: A systematic review of empirical research. *International Journal of Mental Health and Addiction, 10*(2), 278-296. <https://doi.org/10.1007/s11469-011-9318-5>
- Kuss, D. J., & Griffiths, M. D. (2017). Social networking sites and addiction: Ten lessons learned. *International Journal of Environmental Research and Public Health, 14*(3), e311. <https://doi.org/10.3390/ijerph14030311>

- Kuss, D.J., Griffiths, M.D., Karila, L., & Billieux, J. (2014). Internet addiction: A systematic review of epidemiological research for the last decade. *Current Pharmaceutical Design*, 20(25), 4026-4052. <https://doi.org/10.2174/13816128113199990617>
- Kuss, D. J., Shorter, G. W., van Rooij, A. J., van de Mheen, D., & Griffiths, M. D. (2014). The Internet addiction components model and personality: Establishing construct validity via a nomological network. *Computers in Human Behavior*, 39, 312-321. <https://doi.org/10.1016/j.chb.2014.07.031>
- Kuzma, J. M., & Black, D. W. (2008). Epidemiology, prevalence, and natural history of compulsive sexual behavior. *Psychiatric Clinics of North America*, 31(4), 603-611. <https://doi.org/10.1016/j.psc.2008.06.005>
- Kwon, M. W., D'Angelo, J., & McLeod, D. M. (2013). Facebook use and social capital: To bond, to bridge, or to escape. *Bulletin of Science, Technology & Society*, 33, 35-43. <http://dx.doi.org/10.1177/0270467613496767>
- Lachmann, B., Sindermann, C., Sariyska, R. Y., Luo, R., Melchers, M. C., Becker, B., Cooper, A. J., & Montag, C. (2018). The role of empathy and life satisfaction in internet and smartphone use disorder. *Frontiers in Psychology*, 9, e398. <https://doi.org/10.3389/fpsyg.2018.00398>
- Lam, L. T. (2014). Internet gaming addiction, problematic use of the internet, and sleep problems: A systematic review. *Current Psychiatry Reports*, 16, e444. <https://doi.org/10.1007/s11920-014-0444-1>
- Lam, L. T., & Lam, M. K. (2017). The association between financial literacy and Problematic Internet Shopping in a multinational sample. *Addictive Behaviors Reports*, 6, 123-127. <https://doi.org/10.1016/j.abrep.2017.10.002>

- LaPlante, D. A., & Shaffer, H. J. (2007). Understanding the influence of gambling opportunities: Expanding exposure models to include adaptation. *American Journal of Orthopsychiatry*, 77(4), 616-623. <https://doi.org/10.1037/0002-9432.77.4.616>
- Laségue C. (1873). On hysterical anorexia. *Medical Times and Gazette*, 2, 265–266. <https://doi.org/10.1002/j.1550-8528.1997.tb00676.x>
- Lavelle, D. (2018). Mukbang: Is loneliness behind the craze for watching other people eating? *The Guardian*, November 5, 2018. Retrieved October 16, 2019, from: <https://www.theguardian.com/food/shortcuts/2018/nov/05/mukbang-is-loneliness-behind-the-craze-for-watching-other-people-eating>.
- Lavender, J. M., & Anderson, D. A. (2010). Contribution of emotion regulation difficulties to disordered eating and body dissatisfaction in college men. *International Journal of Eating Disorders*, 43(4), 352-357. <https://doi.org/10.1002/eat.20705>
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Lee, D. G., Kelly, K. R., & Edwards, J. K. (2006). A closer look at the relationships among trait procrastination, neuroticism, and conscientiousness. *Personality and Individual Differences*, 40, 27-37. <https://doi.org/10.1016/j.paid.2005.05.010>
- Lee, H. R., Jeong, E. J., & Kim, J. W. (2016, January). Role of internal health belief, catharsis seeking, and self-efficacy in game players' aggression. In *2016 49th Hawaii International Conference on System Sciences (HICSS)* (pp. 3791-3800). IEEE.
- Lee, S. L. (2019). Predicting SNS addiction with the Big Five and the Dark Triad. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 13(1), e3. <https://doi.org/10.5817/CP2019-1-3>
- Lemmens, J. S., Valkenburg, P. M., & Gentile, D. A. (2015). The Internet gaming disorder scale. *Psychological Assessment*, 27(2), 567-582. <https://psycnet.apa.org/doi/10.1037/pas0000062>

- Lemmens, J. S., Valkenburg, P. M., & Peter, J. (2009). Development and validation of a game addiction scale for adolescents. *Media Psychology, 12*(1), 77-95.
<https://doi.org/10.1080/15213260802669458>
- Lent, M. R., Eichen, D. M., Goldbacher, E., Wadden, T. A., & Foster, G. D. (2014). Relationship of food addiction to weight loss and attrition during obesity treatment. *Obesity, 22*(1), 52-55. <https://doi.org/10.1002/oby.20512>
- Levin, K. A. (2006). Study design III: Cross-sectional studies. *Evidence-based Dentistry, 7*(1), 24-25. <https://doi.org/10.1038/sj.ebd.6400375>
- Ley, D., Prause, N., & Finn, P. (2014). The emperor has no clothes: A review of the ‘pornography addiction’ model. *Current Sexual Health Reports, 6*(2), 94-105.
<https://doi.org/10.1007/s11930-014-0016-8>
- Li, J. B., Mo, P. K., Lau, J. T., Su, X. F., Zhang, X., Wu, A. M., ... & Chen, Y. X. (2018). Online social networking addiction and depression: The results from a large-scale prospective cohort study in Chinese adolescents. *Journal of Behavioral Addictions, 7*, 686-696. <https://doi.org/10.1556/2006.7.2018.69>
- Li, L., Xu, D. D., Chai, J. X., Wang, D., Li, L., Zhang, L., ... & Xiang, Y. T. (2018). Prevalence of internet addiction disorder in Chinese university students: A comprehensive meta-analysis of observational studies. *Journal of Behavioral Addictions, 7*(3), 610-623.
<https://doi.org/10.1556/2006.7.2018.53>
- Li, W., Garland, E. L., O’Brien, J. E., Tronnier, C., McGovern, P., Anthony, B., & Howard, M. O. (2018). Mindfulness-oriented recovery enhancement for video game addiction in emerging adults: Preliminary findings from case reports. *International Journal of Mental Health and Addiction, 16*(4), 928-945. <https://doi.org/10.1007/s11469-017-9765-8>
- Liu, C., & Ma, J. L. (2019). Adult attachment style, emotion regulation, and social networking sites addiction. *Frontiers in Psychology, 10*, 2352.

<https://doi.org/10.3389/fpsyg.2019.02352>

Liu, L. S., Huh, J., Neogi, T., Inkpen, K., & Pratt, W. (2013, April). Health vlogger-viewer interaction in chronic illness management. In *Proceedings of the SIGCHI conference on Human factors in computing systems* (pp. 49-58). ACM.

Liu, J., Ahmed, M. Z., Ahmed, O., Griffiths, M. D., & Chen, L. (2021). Development and psychometric assessment of the problematic QQ Use Scale among adolescents. *International Journal of Environmental Research and Public Health*, *18*(13), 6744.

<https://doi.org/10.3390/ijerph18136744>

Lipsman, N., Woodside, D. B., Giacobbe, P., Hamani, C., Carter, J. C., Norwood, S. J., ... & Lozano, A. M. (2013). Subcallosal cingulate deep brain stimulation for treatment-refractory anorexia nervosa: A phase 1 pilot trial. *The Lancet*, *381*(9875), 1361-1370.

[https://doi.org/10.1016/S0140-6736\(12\)62188-6](https://doi.org/10.1016/S0140-6736(12)62188-6)

Lo, H. Y., & Harvey, N. (2012). Effects of shopping addiction on consumer decision-making: Web-based studies in real time. *Journal of Behavioral Addictions*, *1*(4), 162-170.

<https://doi.org/10.1556/jba.1.2012.006>

Lopez-Fernandez, O., Romo, L., Kern, L., Rousseau, A., Graziani, P., Rochat, L., ... & Kuss, D. J. (2022). Perceptions underlying addictive technology use patterns: Insights for Cognitive-Behavioural Therapy. *International Journal of Environmental Research and Public Health*, *19*(1), e544. <https://doi.org/10.3390/ijerph19010544>

Love, T., Laier, C., Brand, M., Hatch, L., & Hajela, R. (2015). Neuroscience of internet pornography addiction: a review and update. *Behavioral Sciences*, *5*, 388-433.

<https://doi.org/10.3390/bs5030388>

Lozano, J. M. G., & Rodríguez, F. M. M. (2022). Systematic review: Preventive intervention to curb the youth online gambling problem. *Sustainability*, *14*(11), e6402.

<https://doi.org/10.3390/su14116402>

- Ludlow, L., & Klein, K. (2014). Suppressor variables: The difference between ‘is’ versus ‘acting as’. *Journal of Statistics Education*, 22, 1-28.
<https://doi.org/10.1080/10691898.2014.11889703>
- Lynam, D. R. (2013). Development of a short form of the UPPS-P Impulsive Behavior Scale. Unpublished Technical Report. Retrieved December 14, 2021, from:
<https://www.impulsivity.org/measurement/upps-p/>
- Lyons, M., & Rice, H. (2014). Thieves of time? Procrastination and the Dark Triad of personality. *Personality and Individual Differences*, 61, 34-37.
<https://doi.org/10.1016/j.paid.2014.01.002>
- Malm, S. (2014). South Korean woman known as The Diva makes £5,600 a month streaming herself eating online for three hours a day (yet manages to stay chopstick thin). *Daily Mail*, January 28, 2014. Retrieved October 16, 2019, from:
<https://www.dailymail.co.uk/news/article-2547254/South-Korean-woman-known-The-Diva-makes-9-400-month-streaming-eating-online-three-hours-day-manages-stay-chopstick-thin.html>
- Maner, F., & Aydin, A. (2007). The psychosociocultural factors in bulimia nervosa. *Düşünen Adam The Journal of Psychiatry and Neurological Sciences*, 20, 25-37.
- Maraz, A., Van den Brink, W., & Demetrovics, Z. (2015). Prevalence and construct validity of compulsive buying disorder in shopping mall visitors. *Psychiatry Research*, 228(3), 918-924. <https://doi.org/10.1016/j.psychres.2015.04.012>
- Maraz, A., Griffiths, M. D., & Demetrovics, Z. (2016). The prevalence of compulsive buying: A meta-analysis. *Addiction*, 111(3), 408-419. <https://doi.org/10.1111/add.13223>
- Maraz, A., Urbán, R., Griffiths, M. D., & Demetrovics, Z. (2015). An empirical investigation of dance addiction. *PloS One*, 10(5), e0125988.
<https://doi.org/10.1371/journal.pone.0125988>

- Marciano, L., Schulz, P. J., & Camerini, A. L. (2021). How smartphone use becomes problematic: Application of the ALT-SR model to study the predicting role of personality traits. *Computers in Human Behavior, 119*, 106731. <https://doi.org/10.1016/j.chb.2021.106731>
- Marcus, D. K., Zeigler-Hill, V., Mercer, S. H., & Norris, A. L. (2014). The psychology of spite and the measurement of spitefulness. *Psychological Assessment, 26*, 563-574. <https://doi.org/10.1037/a0036039>
- Marino, C., Canale, N., Vieno, A., Caselli, G., Scacchi, L., & Spada, M. M. (2020). Social anxiety and internet gaming disorder: The role of motives and metacognitions. *Journal of Behavioral Addictions, 9*(3), 617-628. <https://doi.org/10.1556/2006.2020.00044>
- Mazar, A., Zorn, M., Becker, N., & Volberg, R. A. (2020). Gambling formats, involvement, and problem gambling: which types of gambling are more risky?. *BMC Public Health, 20*(1), e711. <https://doi.org/10.1186/s12889-020-08822-2>
- McCarthy, A. (2017). This Korean food phenomenon is changing the internet. *Eater*, April 19. Retrieved 21 October, 2019, from: <https://www.eater.com/2017/4/19/15349568/mukbang-videos-korean-youtube>.
- McCaslin, M. L., & Scott, K. W. (2003). The five-question method for framing a qualitative research study. *The Qualitative Report, 8*(3), 447-461. <https://doi.org/10.46743/2160-3715/2003.1880>
- McCormack, A., & Griffiths, M. D. (2012). Motivating and inhibiting factors in online gambling behaviour: A grounded theory study. *International Journal of Mental Health and Addiction, 10*(1), 39-53. <https://doi.org/10.1007/s11469-010-9300-7>
- McCormack, A., Shorter, G. W., & Griffiths, M. D. (2013). An examination of participation in online gambling activities and the relationship with problem gambling. *Journal of Behavioral Addictions, 2*(1), 31-41. <https://doi.org/10.1556/jba.2.2013.1.5>

- McCrae, R. R., & Costa Jr, P. T. (1997). Personality trait structure as a human universal. *American Psychologist*, 52(5), 509-516.
<https://psycnet.apa.org/doi/10.1037/0003-066X.52.5.509>
- McFadyen, S. (2015). Finger lickin' not so good! 'Food porn' YouTube star sucks on a raw chicken in stomach-churning clip. *Daily Mirror*, December 29, 2015. Retrieved October 16, 2019, from: <https://www.mirror.co.uk/news/weird-news/finger-lickin-not-good-food-7086495>
- Medenica, S., Račić, M., & Joksimović, V. (2015). Internet and computer addiction: “New age” disease of the 21st century. *Biomedicinska Istrazivanja* 6(1), 69-75.
<https://doi.org/10.7251/BII1501069M>
- Meerkerk, G. J., Van Den Eijnden, R. J., Vermulst, A. A., & Garretsen, H. F. (2009). The compulsive internet use scale (CIUS): Some psychometric properties. *Cyberpsychology & Behavior*, 12(1), 1-6. <https://doi.org/10.1089/cpb.2008.0181>
- Meule, A., & Gearhardt, A. N. (2014). Five years of the Yale Food Addiction Scale: Taking stock and moving forward. *Current Addiction Reports*, 1(3), 193-205.
<https://doi.org/10.1007/s40429-014-0021-z>
- Meule, A., & Kübler, A. (2012). The translation of substance dependence criteria to food-related behaviors: Different views and interpretations. *Frontiers in Psychiatry*, 3, 64.
<https://doi.org/10.3389/fpsy.2012.00064>
- Meule, A., Lutz, A., Vögele, C., & Kübler, A. (2012). Food cravings discriminate differentially between successful and unsuccessful dieters and non-dieters. Validation of the Food Cravings Questionnaires in German. *Appetite*, 58, 88–97.
<https://doi.org/10.1016/j.appet.2011.09.010>

- Meule, A., Müller, A., Gearhardt, A. N., & Blechert, J. (2017). German version of the Yale Food Addiction Scale 2.0: Prevalence and correlates of 'food addiction' in students and obese individuals. *Appetite*, *115*, 54-61. <https://doi.org/10.1016/j.appet.2016.10.003>
- Meule, A., Vögele, C., & Kübler, A. (2012). German translation and validation of the Yale Food Addiction Scale. *Diagnostica*, *58*, 115-126. <https://doi.org/10.1026/0012-1924/a000047>
- Michener, W., & Rozin, P. (1994). Pharmacological versus sensory factors in the satiation of chocolate craving. *Physiology & Behavior*, *56*(3), 419-422. [https://doi.org/10.1016/0031-9384\(94\)90283-6](https://doi.org/10.1016/0031-9384(94)90283-6)
- Mies, G. W., Treur, J. L., Larsen, J. K., Halberstadt, J., Pasman, J. A., & Vink, J. M. (2017). The prevalence of food addiction in a large sample of adolescents and its association with addictive substances. *Appetite*, *118*, 97–105. <https://doi.org/10.1016/j.appet.2017.08.002>
- Mitchell, J. E. (2016). Medical comorbidity and medical complications associated with binge-eating disorder. *International Journal of Eating Disorders*, *49*, 319-323. <https://doi.org/10.1002/eat.22452>
- Mitchell, J. E., & Crow, S. (2006). Medical complications of anorexia nervosa and bulimia nervosa. *Current Opinion in Psychiatry*, *19*(4), 438-443. <https://doi.org/10.1097/01.yco.0000228768.79097.3e>
- Montag, C., Bey, K., Sha, P., Li, M., Chen, Y. F., Liu, W. Y., ... & Reuter, M. (2015). Is it meaningful to distinguish between generalized and specific Internet addiction? Evidence from a cross-cultural study from Germany, Sweden, Taiwan and China. *Asia-Pacific Psychiatry*, *7*(1), 20-26. <https://doi.org/10.1111/appy.12122>
- Moon, J., Choe, Y., & Song, H. (2021). Determinants of consumers' online/offline shopping behaviours during the COVID-19 pandemic. *International Journal of Environmental Research and Public Health*, *18*(4), e1593. <https://doi.org/10.3390/ijerph18041593>

- Moran, M. (2019). Mukbang is 'sexy turn-on' online trend where fans watch women eat huge takeaways. *Daily Star*, April 8, 2019. Retrieved October 16, 2019, from:
<https://www.dailystar.co.uk/real-life/mukbang-eating-video-korea-australia-17109890>.
- Morgan, D. (1998). Practical strategies for combining qualitative and quantitative methods: Applications to health research. *Qualitative Health Research*, 8, 362-376.
<https://doi.org/10.1177/104973239800800307>
- Morse, J. M. (2015). Critical analysis of strategies for determining rigor in qualitative inquiry. *Qualitative Health Research*, 25(9), 1212-1222.
<https://doi.org/10.1177/1049732315588501>
- Mortensen, K., & Hughes, T. L. (2018). Comparing Amazon's Mechanical Turk platform to conventional data collection methods in the health and medical research literature. *Journal of General Internal Medicine*, 33, 533-538. <https://doi.org/10.1007/s11606-017-4246-0>
- Mrad, M., & Cui, C. C. (2020). Comorbidity of compulsive buying and brand addiction: An examination of two types of addictive consumption. *Journal of Business Research*, 113, 399-408. <https://doi.org/10.1016/j.jbusres.2019.09.023>
- Mueller, A., Mitchell, J. E., Crosby, R. D., Gefeller, O., Faber, R. J., Martin, A., ... & de Zwaan, M. (2010). Estimated prevalence of compulsive buying in Germany and its association with sociodemographic characteristics and depressive symptoms. *Psychiatry Research*, 180(2-3), 137-142. <https://doi.org/10.1016/j.psychres.2009.12.001>
- Mukhopadhyay, S. C., & Suryadevara, N. K. (2014). Internet of things: Challenges and opportunities. *Internet of Things*, 1-17. https://doi.org/10.1007/978-3-319-04223-7_1
- Müller, A., Brand, M., Claes, L., Demetrovics, Z., De Zwaan, M., Fernández-Aranda, F., ... & Kyrios, M. (2019). Buying-shopping disorder—is there enough evidence to support its inclusion in ICD-11?. *CNS Spectrums*, 24(4), 374-379.

<https://doi.org/10.1017/S1092852918001323>

- Müller, A., Joshi, M., & Thomas, T. A. (2022). Excessive shopping on the internet: Recent trends in compulsive buying-shopping disorder. *Current Opinion in Behavioral Sciences*, *44*, e101116. <https://doi.org/10.1016/j.cobeha.2022.101116>
- Müller, A., Steins-Loeber, S., Trotzke, P., Vogel, B., Georgiadou, E., & De Zwaan, M. (2019). Online shopping in treatment-seeking patients with buying-shopping disorder. *Comprehensive Psychiatry*, *94*, e152120. <https://doi.org/10.1016/j.comppsy.2019.152120>
- Müller, S. M., Stolze, D., & Brand, M. (2021). Predictors of social-zapping behavior: Dark Triad, impulsivity, and procrastination facets contribute to the tendency toward last-minute cancellations. *Personality and Individual Differences*, *168*, e110334. <https://doi.org/10.1016/j.paid.2020.110334>
- Munro, C., Randell, L., & Lawrie, S. M. (2017). An integrative bio-psycho-social theory of anorexia nervosa. *Clinical Psychology & Psychotherapy*, *24*(1), 1-21. <https://doi.org/10.1002/cpp.2047>
- Murali, V., Ray, R., & Shaffiullha, M. (2012). Shopping addiction. *Advances in Psychiatric Treatment*, *18*(4), 263-269. <https://doi.org/10.1192/apt.bp.109.007880>
- Murray, H. B., Thomas, J. J., Hinz, A., Munsch, S., & Hilbert, A. (2018). Prevalence in primary school youth of pica and rumination behavior: The understudied feeding disorders. *International Journal of Eating Disorders*, *51*(8), 994-998. <https://doi.org/10.1002/eat.22898>
- Musetti, A., Gori, A., Alessandra, A., Topino, E., Terrone, G., Plazzi, G., ... & Franceschini, C. (2022). The interplay between problematic online pornography use, psychological stress, emotion dysregulation and insomnia symptoms during the COVID-19 pandemic: A mediation analysis. *Nature and Science of Sleep*, *14*, 83-92.

<https://doi.org/10.2147/NSS.S348242>

- Ng, B. D., & Wiemer-Hastings, P. (2005). Addiction to the internet and online gaming. *CyberPsychology & Behavior*, 8, 110-113. <https://doi.org/10.1089/cpb.2005.8.110>
- Nikbin, D., Taghizadeh, S. K., & Rahman, S. A. (2022). Linking Dark Triad traits to Instagram addiction: The mediating role of motives. *Technology in Society*, 68, 101892. <https://doi.org/10.1016/j.techsoc.2022.101892>
- Nunes-Neto, P. R., Köhler, C. A., Schuch, F. B., Solmi, M., Quevedo, J., Maes, M., et al. (2018). Food addiction: Prevalence, psychopathological correlates and associations with quality of life in a large sample. *Journal of Psychiatric Research*, 96, 145–152. <https://doi.org/10.1016/j.jpsychires.2017.10.003>
- Okumus, B., Dedeoğlu, B. B., & Shi, F. (2021). Gender and generation as antecedents of food neophobia and food neophilia. *Tourism Management Perspectives*, 37, 100773. <https://doi.org/10.1016/j.tmp.2020.100773>
- Omar, A. E. M., ElRasheed, A. H., Azzam, H. M., ElZoheiry, A. K., ElSerafi, D. M., ElGhamry, R. H., & Naguib, R. M. (2016). Personality profile and affect regulation in relation to food addiction among a sample of Egyptian females. *Addictive Disorders & Their Treatment*, 15(3), 143-148. <https://doi.org/10.1097/ADT.0000000000000084>
- O'Meara, A., Davies, J., & Hammond, S. (2011). The psychometric properties and utility of the Short Sadistic Impulse Scale (SSIS). *Psychological Assessment*, 23, 523-531. <https://psycnet.apa.org/doi/10.1037/a0022400>
- Orosz, G., Bóthe, B., & Tóth-Király, I. (2016). The development of the Problematic Series Watching Scale (PSWS). *Journal of Behavioral Addictions*, 5(1), 144-150. <https://doi.org/10.1556/2006.5.2016.011>

- Orosz, G., Tóth-Király, I., Bóthe, B., & Melher, D. (2016). Too many swipes for today: The development of the Problematic Tinder Use Scale (PTUS). *Journal of Behavioral Addictions, 5*(3), 518-523. <https://doi.org/10.1556/2006.5.2016.016>
- Ort, A., Wirz, D. S., & Fahr, A. (2021). Is binge-watching addictive? Effects of motives for TV series use on the relationship between excessive media consumption and problematic viewing habits. *Addictive Behaviors Reports, 13*, e100325. <https://doi.org/10.1016/j.abrep.2020.100325>
- Ostovar, S., Allahyar, N., Aminpoor, H., Moafian, F., Nor, M. B. M., & Griffiths, M. D. (2016). Internet addiction and its psychosocial risks (depression, anxiety, stress and loneliness) among Iranian adolescents and young adults: A structural equation model in a cross-sectional study. *International Journal of Mental Health and Addiction, 14*(3), 257-267. <https://doi.org/10.1007/s11469-015-9628-0>
- Otero-López, J. M., & Villardefrancos, E. (2014). Prevalence, sociodemographic factors, psychological distress, and coping strategies related to compulsive buying: A cross sectional study in Galicia, Spain. *BMC Psychiatry, 14*(1), e101. <https://doi.org/10.1186/1471-244X-14-101>
- Owens, E. W., Behun, R. J., Manning, J. C., & Reid, R. C. (2012). The impact of Internet pornography on adolescents: A review of the research. *Sexual Addiction & Compulsivity, 19*, 99-122. <https://doi.org/10.1080/10720162.2012.660431>
- Özdemir, Y., Kuzucu, Y., & Ak, Ş. (2014). Depression, loneliness and Internet addiction: How important is low self-control? *Computers in Human Behavior, 34*, 284-290. <https://doi.org/10.1016/j.chb.2014.02.009>
- Özkan, İ., Devrim, A., & Bilgiç, P. (2017). Evaluation of the relationship between food addiction, nutritional status and depression in overweight and obese women. *Journal of Nutrition and Dietetics, 45*, 242–249.

- Özsoy, E., Rauthmann, J. F., Jonason, P. K., & Ardiç, K. (2017). Reliability and validity of the Turkish versions of Dark Triad Dirty Dozen (DTDD-T), Short Dark Triad (SD3-T), and Single Item Narcissism Scale (SINS-T). *Personality and Individual Differences, 117*, 11-14. <https://doi.org/10.1016/j.paid.2017.05.019>
- Pan, Y. C., Chiu, Y. C., & Lin, Y. H. (2020). Systematic review and meta-analysis of epidemiology of internet addiction. *Neuroscience & Biobehavioral Reviews, 118*, 612-622. <https://doi.org/10.1016/j.neubiorev.2020.08.013>
- Park, K. (2018). South Korea to clamp down on binge-eating trend amid obesity fears. *Daily Telegraph*, October 25, 2018. Retrieved October 16, 2019, from: <https://www.telegraph.co.uk/news/2018/10/25/south-korea-clamp-binge-eating-trend-amid-obesity-fears/>
- Patton, J. H., Stanford, M. S., & Barratt, E. S. (1995). Factor structure of the Barratt impulsiveness scale. *Journal of Clinical Psychology, 51*(6), 768-774. [https://doi.org/10.1002/1097-4679\(199511\)51:6%3C768::AID-JCLP2270510607%3E3.0.CO;2-1](https://doi.org/10.1002/1097-4679(199511)51:6%3C768::AID-JCLP2270510607%3E3.0.CO;2-1)
- Pedram, P., Wadden, D., Amini, P., Gulliver, W., Randell, E., Cahill, F., ... & Sun, G. (2013). Food addiction: Its prevalence and significant association with obesity in the general population. *PloS One, 8*(9), e74832. <https://doi.org/10.1371/journal.pone.0074832>
- Pepe, M., Di Nicola, M., Moccia, L., Franza, R., Chieffo, D., Addolorato, G., ... & Sani, G. (2022). Limited access to emotion regulation strategies mediates the association between positive urgency and sustained binge drinking in patients with alcohol use disorder. *International Journal of Mental Health and Addiction*. Advanced online publication. <https://doi.org/10.1007/s11469-022-00807-z>
- Pereira-Castro, M. R., Pinto, A. G., Caixeta, T. R., Monteiro, R. A., Bermúdez, X. P. D., & Mendonça, A. V. M. (2022). Digital forms of commensality in the 21st Century: A

- scoping review. *International Journal of Environmental Research and Public Health*, 19(24), e16734. <https://doi.org/10.3390/ijerph192416734>
- Pereira, B., Sung, B., & Lee, S. (2019). I like watching other people eat: A cross-cultural analysis of the antecedents of attitudes towards Mukbang. *Australasian Marketing Journal (AMJ)*, 27, 78-90. <https://doi.org/10.1016/j.ausmj.2019.03.001>
- Perry, S. L. (2018). Pornography use and depressive symptoms: Examining the role of moral incongruence. *Society and Mental Health*, 8(3), 195-213. <https://doi.org/10.1177/2156869317728373>
- Pettit, H. (2019). Bizarre ‘Mukbang’ YouTube trend sees women scoff 20,000-calorie McDonalds meals earning them millions – and is branded ‘sexy turn on’ by some fans, *The Sun*, April 7, 2019. Retrieved October 16, 2019, from: <https://www.thesun.co.uk/tech/8801045/mukbang-youtube-trend-women-earn-millions/>.
- Pham, M. T., Rajić, A., Greig, J. D., Sargeant, J. M., Papadopoulos, A., & McEwen, S. A. (2014). A scoping review of scoping reviews: Advancing the approach and enhancing the consistency. *Research Synthesis Methods*, 5, 371-385. <https://doi.org/10.1002/jrsm.1123>
- Phanasathit, M., Manwong, M., Hanprathet, N., Khumsri, J., & Yingyeun, R. (2015). Validation of the Thai version of Bergen Facebook Addiction Scale (Thai-BFAS). *Journal of the Medical Association of Thailand*, 98, 108–117.
- Philaretou, A. G., Mahfouz, A. Y., & Allen, K. R. (2005). Use of internet pornography and men’s well-being. *International Journal of Men’s Health*, 4, 149-169. <https://psycnet.apa.org/doi/10.3149/jmh.0402.149>
- Pi-Sunyer, F. X., Becker, D. M., Bouchard, C., Carleton, R. A., Colditz, G. A., Dietz, W. H., ... & Higgins, M. (1998). Clinical guidelines on the identification, evaluation, and

- treatment of overweight and obesity in adults: Executive summary. *American Journal of Clinical Nutrition*, 68, 899-917. <https://doi.org/10.1093/ajcn/68.4.899>
- Pizzol, D., Bertoldo, A., & Foresta, C. (2016). Adolescents and web porn: A new era of sexuality. *International Journal of Adolescent Medicine and Health*, 28, 169-173. <https://doi.org/10.1515/ijamh-2015-0003>
- Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, 63, 539-569. <https://doi.org/10.1146/annurev-psych-120710-100452>
- Pontes, H. M., Andreassen, C. S., & Griffiths, M. D. (2016). Portuguese validation of the Bergen Facebook Addiction Scale: an empirical study. *International Journal of Mental Health and Addiction*, 14, 1062-1073. <https://doi.org/10.1007/s11469-016-9694-y>
- Pontes, H. M., & Griffiths, M. D. (2014). Internet addiction disorder and internet gaming disorder are not the same. *Journal of Addiction Research & Therapy*, 5, e124. <http://dx.doi.org/10.4172/2155-6105.1000e124>
- Pontes, H. M., & Griffiths, M. D. (2015). Measuring DSM-5 internet gaming disorder: Development and validation of a short psychometric scale. *Computers in Human Behavior*, 45, 137-143. <https://doi.org/10.1016/j.chb.2014.12.006>
- Pontes, H. M., Macur, M., & Griffiths, M. D. (2016). Internet gaming disorder among Slovenian primary schoolchildren: Findings from a nationally representative sample of adolescents. *Journal of Behavioral Addictions*, 5(2), 304-310. <https://doi.org/10.1556/2006.5.2016.042>
- Potter, W. J., & Levine-Donnerstein, D. (1999). Rethinking validity and reliability in content analysis. *Journal of Applied Communication Research*, 27(3), 258-284. <https://doi.org/10.1080/00909889909365539>

- Praveera, K. H., Anudeep, M., & Junapudi, S. S. (2021). Cyber-pornography addiction among medical students of Telangana. *Indian Journal of Public Health, 12*(1), 303-309.
<https://doi.org/10.37506/ijphrd.v12i1.13866>
- Prohaska, A. (2013). Feederism: Transgressive behavior or same old patriarchal sex. *International Journal of Social Science Studies, 1*, 104-112.
<https://doi.org/10.11114/ijsss.v1i2.105>
- Prohaska, A. (2014). Help me get fat! Feederism as communal deviance on the Internet. *Deviant Behavior, 35*, 263-274. <https://doi.org/10.1080/01639625.2013.834766>
- Quadflieg, N., & Fichter, M. M. (2019). Long-term outcome of inpatients with bulimia nervosa—Results from the Christina Barz Study. *International Journal of Eating Disorders, 52*(7), 834-845. <https://doi.org/10.1002/eat.23084>
- Radmacher, S. A., & Martin, D. J. (2001). Identifying significant predictors of student evaluations of faculty through hierarchical regression analysis. *Journal of Psychology, 135*(3), 259-268. <https://doi.org/10.1080/00223980109603696>
- Raha, B., Sarma, S., Thilakan, P., & Punnoose, Z. M. (2017). Rumination disorder: An unexplained case of recurrent vomiting. *Indian Journal of Psychological Medicine, 39*(3), 361-363. <https://doi.org/10.4103/0253-7176.207323>
- Rajindrajith, S., Devanarayana, N. M., & Crispus Perera, B. J. (2012). Rumination syndrome in children and adolescents: A school survey assessing prevalence and symptomatology. *BMC Gastroenterology, 12*(1), e163. <https://doi.org/10.1186/1471-230X-12-163>
- Rammstedt, B., & John, O. P. (2007). Measuring personality in one minute or less: A 10-item short version of the Big Five Inventory in English and German. *Journal of Research in Personality, 41*, 203-212. <https://doi.org/10.1016/j.jrp.2006.02.001>
- Randolph, T. G. (1956). The descriptive features of food addiction. Addictive eating and drinking. *Quarterly Journal of Studies on Alcohol, 17*(2), 198-224.

<https://doi.org/10.15288/qjsa.1956.17.198>

Raykov, T., & Marcoulides, G. A. (2011). *Introduction to psychometric theory*. New York: Routledge.

Recktenwald, D. (2017). Toward a transcription and analysis of live streaming on Twitch. *Journal of Pragmatics*, *115*, 68-81. <https://doi.org/10.1016/j.pragma.2017.01.013>

Ricijas, N., Hundric, D. D., & Huic, A. (2016). Predictors of adverse gambling related consequences among adolescent boys. *Children and Youth Services Review*, *67*, 168-176. <https://doi.org/10.1016/j.childyouth.2016.06.008>

Ritschel, C. (2019). Vlogger attacked by octopus as she tries to eat it during live-stream. *The Independent*, May 8, 2019. Retrieved October 16, 2019, from: <https://www.independent.co.uk/life-style/octopus-eat-alive-attack-face-girl-vlogger-live-stream-video-a8904911.html>

Riva, G. (2014). Out of my real body: Cognitive neuroscience meets eating disorders. *Frontiers in Human Neuroscience*, *8*, 236. <https://doi.org/10.3389/fnhum.2014.00236>

Robinson, O. C. (2014). Sampling in interview-based qualitative research: A theoretical and practical guide. *Qualitative Research in Psychology*, *11*(1), 25-41. <https://doi.org/10.1080/14780887.2013.801543>

Rolfe, G. (2006). Validity, trustworthiness and rigour: Quality and the idea of qualitative research. *Journal of Advanced Nursing*, *53*(3), 304-310. <https://doi.org/10.1111/j.1365-2648.2006.03727.x>

Rose, E. A., Porcerelli, J. H., & Neale, A. V. (2000). Pica: Common but commonly missed. *Journal of the American Board of Family Practice*, *13*(5), 353-358. <https://doi.org/10.3122/15572625-13-5-353>

Rose, K., Eldridge, S., & Chapin, L. (2015). The internet of things: An overview. *The Internet Society (ISOC)*, *80*, 1-50.

- Rose, S., & Dhandayudham, A. (2014). Towards an understanding of Internet-based problem shopping behaviour: The concept of online shopping addiction and its proposed predictors. *Journal of Behavioral Addictions*, 3(2), 83-89.
<https://doi.org/10.1556/jba.3.2014.003>
- Rose, S., & Samouel, P. (2009). Internal psychological versus external market-driven determinants of the amount of consumer information search amongst online shoppers. *Journal of Marketing Management*, 25(1-2), 171-190.
<https://doi.org/10.3122/15572625-13-5-353>
- Rosen, C. (2012). Electronic intimacy. *The Wilson Quarterly*, 36, 48-51.
- Ross, M. W., Månsson, S. A., & Daneback, K. (2012). Prevalence, severity, and correlates of problematic sexual Internet use in Swedish men and women. *Archives of Sexual Behavior*, 41(2), 459-466. <https://doi.org/10.1007/s10508-011-9762-0>
- Rothen, S., Briefer, J. F., Deleuze, J., Karila, L., Andreassen, C. S., Achab, S., ... & Billieux, J. (2018). Disentangling the role of users' preferences and impulsivity traits in problematic Facebook use. *PloS One*, 13(9), e0201971.
<https://doi.org/10.1371/journal.pone.0201971>
- Rothman, E. F., Kaczmarzky, C., Burke, N., Jansen, E., & Baughman, A. (2015). "Without porn... i wouldn't know half the things i know now": A qualitative study of pornography use among a sample of urban, low-income, black and Hispanic youth. *Journal of Sex Research*, 52, 736-746. <https://doi.org/10.1080/00224499.2014.960908>
- Rozgonjuk, D., Sindermann, C., Elhai, J. D., & Montag, C. (2020). Fear of Missing Out (FoMO) and social media's impact on daily-life and productivity at work: Do WhatsApp, Facebook, Instagram, and Snapchat Use Disorders mediate that association? *Addictive Behaviors*, 110, 106487. <https://doi.org/10.1016/j.addbeh.2020.106487>

- Rubenking, B., & Bracken, C. C. (2018). Binge-watching: A suspenseful, emotional, habit. *Communication Research Reports*, 35(5), 381-391.
<https://doi.org/10.1080/08824096.2018.1525346>
- Rubin, H. J., & Rubin, I. S. (2011). *Qualitative interviewing: The art of hearing data*. Thousand Oaks, CA: Sage.
- Russell, G. (1979). Bulimia nervosa: An ominous variant of anorexia nervosa. *Psychological Medicine*, 9(3), 429-448. <https://doi.org/10.1017/S0033291700031974>
- Ryan, T., Chester, A., Reece, J., & Xenos, S. (2014). The uses and abuses of Facebook: A review of Facebook addiction. *Journal of Behavioral Addictions*, 3, 133-148.
<https://doi.org/10.1556/jba.3.2014.016>
- Ryan, T., Chester, A., Reece, J., & Xenos, S. (2016). A qualitative exploration of Facebook addiction: Working toward construct validity. *Addicta: The Turkish Journal on Addictions*, 3(1), 55-76. <http://dx.doi.org/10.15805/addicta.2016.3.0004>
- Sadiza, J., Varma, R., Jena, S. P. K., & Singh, T. B. (2011). Group cognitive behaviour therapy in the management of compulsive sex behaviour. *International Journal of Criminal Justice Sciences*, 6, 309-325. <https://doi.org/10.4324/9781315639512-17>
- Sandelowski, M. (1995). Qualitative analysis: What it is and how to begin. *Research in Nursing & Health*, 18(4), 371-375. <https://doi.org/10.1002/nur.4770180411>
- Sanghani, R. (2014). Watching girls binge-eat on camera takes the biscuit, *Daily Telegraph*, January 20, 2014. Retrieved October 16, 2019, from:
<https://www.telegraph.co.uk/women/womens-life/10583917/Sexual-fetish-much-Watching-girls-binge-eat-on-camera-takes-the-biscuit.html>
- Sanlier, N., Yassibas, E., Bilici, S., Sahin, G., & Celik, B. (2016). Does the rise in eating disorders lead to increasing risk of orthorexia nervosa? Correlations with gender,

- education, and body mass index. *Ecology of Food and Nutrition*, 55, 266-278.
<https://doi.org/10.1080/03670244.2016.1150276>
- Sayetta, R. B. (1986). Pica: An overview. *American Family Physician*, 33(5), 181-185.
- Schaefer, L. M., Smith, K. E., Anderson, L. M., Cao, L., Crosby, R. D., Engel, S. G., Crow, S. J., Peterson, C. B., & Wonderlich, S. A. (2020). The role of affect in the maintenance of binge-eating disorder: Evidence from an ecological momentary assessment study. *Journal of Abnormal Psychology*, 129(4), 387-396.
<https://psycnet.apa.org/doi/10.1037/abn0000517>
- Schmidt, U., Adan, R., Böhm, I., Campbell, I. C., Dingemans, A., Ehrlich, S., ... & Zipfel, S. (2016). Eating disorders: The big issue. *The Lancet Psychiatry*, 3(4), 313-315.
[https://doi.org/10.1016/S2215-0366\(16\)00081-X](https://doi.org/10.1016/S2215-0366(16)00081-X)
- Schouwenburg, H. C., & Lay, C. H. (1995). Trait procrastination and the big-five factors of personality. *Personality and Individual Differences*, 18(4), 481-490.
[https://doi.org/10.1016/0191-8869\(94\)00176-S](https://doi.org/10.1016/0191-8869(94)00176-S)
- Schreiber, L. R., Grant, J. E., & Odlaug, B. L. (2012). Emotion regulation and impulsivity in young adults. *Journal of Psychiatric Research*, 46(5), 651-658.
<https://doi.org/10.1016/j.jpsychires.2012.02.005>
- Schulte, E. M., & Gearhardt, A. N. (2018). Associations of food addiction in a sample recruited to be nationally representative of the United States. *European Eating Disorders Review*, 26, 112–119. <https://doi.org/10.1002/erv.2575>
- Schulte, E. M., Grilo, C. M., & Gearhardt, A. N. (2016). Shared and unique mechanisms underlying binge eating disorder and addictive disorders. *Clinical Psychology Review*, 44, 125–139. <https://doi.org/10.1016/j.cpr.2016.02.001>

- Schulte, E. M., Potenza, M. N., & Gearhardt, A. N. (2017). A commentary on the “eating addiction” versus “food addiction” perspectives on addictive-like food consumption. *Appetite, 115*, 9-15. <https://doi.org/10.1016/j.appet.2016.10.033>
- Schwegler-Castañer, A. (2018). At the intersection of thinness and overconsumption: The ambivalence of munching, crunching, and slurping on camera. *Feminist Media Studies, 18*, 782-785. <https://doi.org/10.1080/14680777.2018.1478694>
- Scotland, J. (2012). Exploring the philosophical underpinnings of research: Relating ontology and epistemology to the methodology and methods of the scientific, interpretive, and critical research paradigms. *English Language Teaching, 5*(9), 9-16. <http://dx.doi.org/10.5539/elt.v5n9p9>
- Seidman, G. (2013). Self-presentation and belonging on Facebook: How personality influences social media use and motivations. *Personality and Individual Differences, 54*, 402-407. <https://doi.org/10.1016/j.paid.2012.10.009>
- Şengör, G., & Gezer, C. (2019). Food addiction and its relationship with disordered eating behaviours and obesity. *Eating and Weight Disorders-Studies on Anorexia, Bulimia and Obesity, 24*(6), 1031-1039. <https://doi.org/10.1007/s40519-019-00662-3>
- Setia, M. S. (2016). Methodology series module 3: Cross-sectional studies. *Indian Journal of Dermatology, 61*(3), 261-264. <https://doi.org/10.4103/0019-5154.182410>
- Sevincer, G. M., Ince, E., Taymur, I., & Konuk, N. (2016). Night eating syndrome frequency in university students: Association with impulsivity, depression, and anxiety. *Bulletin of Clinical Psychopharmacology, 26*, 238–247. <https://doi.org/10.5455/bcp.20160322093750>
- Setyawati, R., Hartini, N., & Suryanto, S. (2020). The psychological impacts of internet pornography addiction on adolescents. *Humaniora, 11*(3), 235-244. <https://doi.org/10.21512/humaniora.v11i3.6682>

- Sharma, P., Mahapatra, A., & Narang, A. (2021). Management of Pica associated with relational stress in an adult woman: A case report. *Indian Journal of Case Reports*, 7(1), 12-14. <https://doi.org/10.21512/humaniora.v11i13.6682>
- Sherlock, M., & Wagstaff, D. L. (2019). Exploring the relationship between frequency of Instagram use, exposure to idealized images, and psychological well-being in women. *Psychology of Popular Media Culture*, 8(4), 482-490. <https://psycnet.apa.org/doi/10.1037/ppm0000182>
- Shipman, A. (2019). YouTube trend for extreme food challenges encourages binge eating, warn psychologists. *Daily Telegraph*, September 8, 2019. Retrieved October 16, 2019, from: <https://www.telegraph.co.uk/news/2019/09/08/youtube-trend-extreme-food-challenges-encourages-binge-eating/>.
- Sigre-Leirós, V., Carvalho, J., & Nobre, P. J. (2016). The Sexual Thoughts Questionnaire: Psychometric evaluation of a measure to assess self-reported thoughts during exposure to erotica using sexually functional individuals. *Journal of Sexual Medicine*, 13, 876-884. <https://doi.org/10.1016/j.jsxm.2016.02.162>
- Sindermann, C., Sariyska, R., Lachmann, B., Brand, M., & Montag, C. (2018). Associations between the dark triad of personality and unspecified/specific forms of internet-use disorder. *Journal of Behavioral Addictions*, 7(4), 985-992. <https://doi.org/10.1556/2006.7.2018.114>
- Skoric, M. M., Teo, L. L. C., & Neo, R. L. (2009). Children and video games: Addiction, engagement, and scholastic achievement. *CyberPsychology & Behavior*, 12(5), 567-572. <https://doi.org/10.1089/cpb.2009.0079>
- Slevitch, L. (2011). Qualitative and quantitative methodologies compared: Ontological and epistemological perspectives. *Journal of Quality Assurance in Hospitality & Tourism*, 12(1), 73-81. <https://doi.org/10.1080/1528008X.2011.541810>

- Smith, D. G., & Robbins, T. W. (2013). The neurobiological underpinnings of obesity and binge eating: A rationale for adopting the food addiction model. *Biological Psychiatry*, 73(9), 804-810. <https://doi.org/10.1016/j.biopsych.2012.08.026>
- Snodgrass, J. G., Bagwell, A., Patry, J. M., Dengah II, H. F., Smarr-Foster, C., Van Oostenburg, M., & Lacy, M. G. (2018). The partial truths of compensatory and poor-get-poorer internet use theories: More highly involved videogame players experience greater psychosocial benefits. *Computers in Human Behavior*, 78, 10-25. <https://doi.org/10.1016/j.chb.2017.09.020>
- Sohn, S. H., & Choi, Y. J. (2014). Phases of shopping addiction evidenced by experiences of compulsive buyers. *International Journal of Mental Health and Addiction*, 12(3), 243-254. <https://doi.org/10.1007/s11469-013-9449-y>
- Solmi, M., Wade, T. D., Byrne, S., Del Giovane, C., Fairburn, C. G., Ostinelli, E. G., De Crescenzo, F., Johnson, C., Schmidt, U., Treasure, J., Favaro, A., Zipfel, S., & Cipriani, A. (2021). Comparative efficacy and acceptability of psychological interventions for the treatment of adult outpatients with anorexia nervosa: A systematic review and network meta-analysis. *The Lancet Psychiatry*, 8(3), 215-224. [https://doi.org/10.1016/S2215-0366\(20\)30566-6](https://doi.org/10.1016/S2215-0366(20)30566-6)
- Song, H. (2018). The making of microcelebrity: AfreecaTV and the younger generation in neoliberal South Korea. *Social Media+ Society*, 4, 1-10. <https://doi.org/10.1177/2056305118814906>
- Spada, M. M. (2014). An overview of problematic Internet use. *Addictive Behaviors*, 39(1), 3-6. <https://doi.org/10.1016/j.addbeh.2013.09.007>
- Spence, C., Mancini, M., & Huisman, G. (2019). Digital commensality: Eating and drinking in the company of technology. *Frontiers in Psychology*, 10, e2252. <https://doi.org/10.3389/fpsyg.2019.02252>

- Spenhoff, M., Kruger, T. H., Hartmann, U., & Kobs, J. (2013). Hypersexual behavior in an online sample of males: Associations with personal distress and functional impairment. *Journal of Sexual Medicine, 10*(12), 2996-3005. <https://doi.org/10.1111/jsm.12160>
- Sriwilai, K., & Charoensukmongkol, P. (2016). Face it, don't Facebook it: Impacts of social media addiction on mindfulness, coping strategies and the consequence on emotional exhaustion. *Stress and Health, 32*(4), 427-434. <https://doi.org/10.1002/smi.2637>
- Stafford, T. F., Stafford, M. R., & Schkade, L. L. (2004). Determining uses and gratifications for the Internet. *Decision Sciences, 35*, 259-288. <https://doi.org/10.1111/j.00117315.2004.02524.x>
- Stanton, J. (2015). The skinny Korean 14-year-old who makes £1,000 a night by gorging on fast food on webcam - while thousands of fans watch. *Daily Mail*, August 19, 2015. Retrieved October 16, 2019, from: <https://www.dailymail.co.uk/news/article-3203221/Skinny-Korean-14-wanted-company-ate-dinner-makes-1-000-night-gorging-fast-food-webcam-thousands-fans-watch.html>
- Starcevic, V., Billieux, J., & Schimmenti, A. (2018). Selfitis, selfie addiction, Twitteritis: Irresistible appeal of medical terminology for problematic behaviours in the digital age. *Australian and New Zealand Journal of Psychiatry, 52*, 408-409. <https://doi.org/10.1177/0004867418763532>
- Starcke, K., Antons, S., Trotzke, P., & Brand, M. (2018). Cue-reactivity in behavioral addictions: A meta-analysis and methodological considerations. *Journal of Behavioral Addictions, 7*(2), 227-238. <https://doi.org/10.1556/2006.7.2018.39>
- Starosta, J., Izydorczyk, B., & Dobrowolska, M. (2020). Personality traits and motivation as factors associated with symptoms of problematic binge-watching. *Sustainability, 12*(14), 5810. <https://doi.org/10.3390/su12145810>

- Starosta, J., Izydorczyk, B., & Lizińczyk, S. (2019). Characteristics of people's binge-watching behavior in the "entering into early adulthood" period of life. *Health Psychology Report*, 7(2), 149-164. <https://doi.org/10.5114/hpr.2019.83025>
- Starosta, J., Izydorczyk, B., Sitnik-Warchulska, K., & Lizińczyk, S. (2021). Impulsivity and difficulties in emotional regulation as predictors of binge-watching behaviours. *Frontiers in Psychiatry*, 12, e743870. <https://doi.org/10.3389/fpsy.2021.743870>
- Steel, P. (2007). The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychological Bulletin*, 133, 65-94. <https://psycnet.apa.org/doi/10.1037/0033-2909.133.1.65>
- Steel, P., & Klingsieck, K. B. (2016). Academic procrastination: Psychological antecedents revisited. *Australian Psychologist*, 51, 36-46. <https://doi.org/10.1111/ap.12173>
- Stevens, M. W., Dorstyn, D., Delfabbro, P. H., & King, D. L. (2021). Global prevalence of gaming disorder: A systematic review and meta-analysis. *Australian & New Zealand Journal of Psychiatry*, 55(6), 553-568. <https://doi.org/10.1177/0004867420962851>
- Stone, C. A., & Zhang, B. (2003). Assessing goodness of fit of item response theory models: A comparison of traditional and alternative procedures. *Journal of Educational Measurement*, 40, 331-352. <https://doi.org/10.1111/j.1745-3984.2003.tb01150.x>
- Strahler, J., Kruse, O., Wehrum-Osinsky, S., Klucken, T., & Stark, R. (2018). Neural correlates of gender differences in distractibility by sexual stimuli. *Neuroimage*, 176, 499-509. <https://doi.org/10.1016/j.neuroimage.2018.04.072>
- Strand, M., & Gustafsson, S. A. (2020). Mukbang and disordered eating: A netnographic analysis of online eating broadcasts. *Culture, Medicine, and Psychiatry*. Advance online publication. <https://doi.org/10.1007/s11013-020-09674-6.pdf>
- Stunkard, A. J. (1959). Eating patterns and obesity. *Psychiatric Quarterly*, 33(2), 284-295. <https://doi.org/10.1007/BF01575455>

- Stunkard, A. J., Grace, W. J., & Wolff, H. G. (1955). The night-eating syndrome: A pattern of food intake among certain obese patients. *The American Journal of Medicine*, *19*(1), 78-86. [http://dx.doi.org/10.1016/0002-9343\(55\)90276-X](http://dx.doi.org/10.1016/0002-9343(55)90276-X)
- Sublette, V. A., & Mullan, B. (2012). Consequences of play: A systematic review of the effects of online gaming. *International Journal of Mental Health and Addiction*, *10*, 3-23. <https://doi.org/10.1007/s11469-010-9304-3>
- Sussman, S., Arpawong, T. E., Sun, P., Tsai, J., Rohrbach, L. A., & Spruijt-Metz, D. (2014). Prevalence and co-occurrence of addictive behaviors among former alternative high school youth. *Journal of Behavioral Addictions*, *3*(1), 33-40. <https://doi.org/10.1556/jba.3.2014.005>
- Sussman, S., Lisha, N., & Griffiths, M. (2011). Prevalence of the addictions: A problem of the majority or the minority? *Evaluation & the Health Professions*, *34*(1), 3-56. <https://doi.org/10.1177/0163278710380124>
- Süral, I., Griffiths, M. D., Kircaburun, K., & Emirtekin, E. (2019). Trait emotional intelligence and problematic social media use among adults: The mediating role of social media use motives. *International Journal of Mental Health and Addiction*, *17*(2), 336-345. <https://doi.org/10.1007/s11469-018-0022-6>
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics*. Boston, MA: Pearson Education Inc
- Tang, J. H., Chen, M. C., Yang, C. Y., Chung, T. Y., & Lee, Y. A. (2016). Personality traits, interpersonal relationships, online social support, and Facebook addiction. *Telematics and Informatics*, *33*, 102-108. <https://doi.org/10.1016/j.tele.2015.06.003>
- Tatsi, E., Kamal, A., Turvill, A., & Holler, R. (2019). 'Emotion dysregulation and loneliness as predictors of food addiction.' *Journal of Health and Social Sciences*. *4*(1), 43-58. <http://dx.doi.org/10.19204/2019/mtnd5>

- Terry, A., Szabo, A., & Griffiths, M. (2004). The Exercise Addiction Inventory: A new brief screening tool. *Addiction Research & Theory, 12*(5), 489-499.
<https://doi.org/10.1080/16066350310001637363>
- Terry, L. L., Suschinsky, K. D., Lalumiere, M. L., & Vasey, P. L. (2012). Feederism: An exaggeration of a normative mate selection preference? *Archives of Sexual Behavior, 41*, 249-260. <https://doi.org/10.1007/s10508-012-9925-7>
- Thatcher, A., Wretschko, G., & Fridjhon, P. (2008). Online flow experiences, problematic Internet use and Internet procrastination. *Computers in Human Behavior, 24*, 2236-2254.
<https://doi.org/10.1016/j.chb.2007.10.008>
- Thomas, J. J., Lawson, E. A., Micali, N., Misra, M., Deckersbach, T., & Eddy, K. T. (2017). Avoidant/restrictive food intake disorder: A three-dimensional model of neurobiology with implications for etiology and treatment. *Current Psychiatry Reports, 19*(8), 1-9.
<https://doi.org/10.1007/s11920-017-0795-5>
- Thomas, J. J., Vartanian, L. R., & Brownell, K. D. (2009). The relationship between eating disorder not otherwise specified (EDNOS) and officially recognized eating disorders: meta-analysis and implications for DSM. *Psychological Bulletin, 135*(3), 407-433.
<https://psycnet.apa.org/doi/10.1037/a0015326>
- Thomsen, K.R, Callesen, M. B., Hesse, M., Kvamme, T. L., Pedersen, M. M., Pedersen, M. U., & Voon, V. (2018). Impulsivity traits and addiction-related behaviors in youth. *Journal of Behavioral Addictions, 7*(2), 317-330. <https://doi.org/10.1556/2006.7.2018.22>
- Thornton, L. M., Watson, H. J., Jangmo, A., Welch, E., Wiklund, C., von Hausswolff-Juhlin, Y., Norring, C., Herman, B. K., Larsson, H., & Bulik, C. M. (2017). Binge-eating disorder in the Swedish national registers: Somatic comorbidity. *International Journal of Eating Disorders, 50*(1), 58-65. <https://doi.org/10.1002/eat.22624>

- Tibbett, T. P., & Ferrari, J. R. (2015). The portrait of the procrastinator: Risk factors and results of an indecisive personality. *Personality and Individual Differences*, 82, 175-184.
<https://doi.org/10.1016/j.paid.2015.03.014>
- Toker, D., & Hocaoglu, Ç. (2009). Eating disorders and family structure: A review. *Dusunen Adam-Journal of Psychiatry and Neurological Sciences*, 22(1-4) 36-42.
- Tokunaga, R. S. (2011). Social networking site or social surveillance site? Understanding the use of interpersonal electronic surveillance in romantic relationships. *Computers in Human Behavior*, 27(2), 705-713. <https://doi.org/10.1016/j.chb.2010.08.014>
- Tosuntaş, Ş. B., Karadağ, E., Emirtekin, E., Kircaburun, K., & Griffiths, M. D. (2020). Sofalizing and its relationship with social media addiction and psychosocial factors: A new phenomenon among emerging adults. *The Social Science Journal*. Advance online publication. <https://doi.org/10.1080/03623319.2020.1809900>
- Tran, C. (2019). 'Food turns me on': How young women are earning a fortune by eating giant plates of takeaway on camera as part of a bizarre social media fad. *Daily Mail*, April 8, 2019. Retrieved October 16, 2019, from: <https://www.dailymail.co.uk/femail/article-6897147/Mukbang-women-share-videos-gorging-food-feed-family-one-sitting.html>
- Treasure, J., & Schmidt, U. (2013). The cognitive-interpersonal maintenance model of anorexia nervosa revisited: A summary of the evidence for cognitive, socio-emotional and interpersonal predisposing and perpetuating factors. *Journal of Eating Disorders*, 1(1), 1-10. <https://doi.org/10.1186/2050-2974-1-13>
- Treasure, J., Willmott, D., Ambwani, S., Cardi, V., Clark Bryan, D., Rowlands, K., & Schmidt, U. (2020). Cognitive interpersonal model for anorexia nervosa revisited: The perpetuating factors that contribute to the development of the severe and enduring illness. *Journal of Clinical Medicine*, 9(3), e630. <https://doi.org/10.3390/jcm9030630>

- Troisi, A., Massaroni, P., & Cuzzolaro, M. (2005). Early separation anxiety and adult attachment style in women with eating disorders. *British Journal of Clinical Psychology*, *44*(1), 89-97. <https://doi.org/10.1348/014466504X20053>
- Trotzke, P., Starcke, K., Müller, A., & Brand, M. (2015). Pathological buying online as a specific form of internet addiction: A model-based experimental investigation. *PloS One*, *10*(10), e0140296. <https://doi.org/10.1371/journal.pone.0140296>
- Tu, Y., & Fishbach, A. (2017). The social path to satiation: Satisfying desire vicariously via other's consumption. In *Annual Conference of the Association for Consumer Research (ACR), Duluth, Minnesota*. Retrieved 16 October, 2019, from: http://www.acrwebsite.org/volumes/v45/acr_vol45_1024547.pdf.
- Udo, T., & Grilo, C. M. (2018). Prevalence and correlates of DSM-5–defined eating disorders in a nationally representative sample of US adults. *Biological Psychiatry*, *84*(5), 345-354. <https://doi.org/10.1371/journal.pone.0140296>
- Ünal, E., Aydın, R., Gökler, M. E., & Ünsal, A. (2017). Eating disorders and anxiety among high school students in Western area of Turkey. *International Journal of Research in Medical Sciences*, *4*, 3513–3520. <http://dx.doi.org/10.18203/2320-6012.ijrms20162322>
- Uzun, A. M., Ünal, E., & Tokel, S. T. (2014). Exploring internet addiction, academic procrastination and general procrastination among pre-service ICT teachers. *Online Submission*, *4*, 189-201.
- van Bloemendaal, L., IJzerman, R. G., Ten Kulve, J. S., Barkhof, F., Konrad, R. J., Drent, M. L., ... & Diamant, M. (2014). GLP-1 receptor activation modulates appetite-and reward-related brain areas in humans. *Diabetes*, *63*(12), 4186-4196. <https://doi.org/10.2337/db14-0849>
- Van den Eijnden, R. J., Lemmens, J. S., & Valkenburg, P. M. (2016). The social media disorder scale. *Computers in Human Behavior*, *61*, 478-487.

<https://doi.org/10.1016/j.chb.2016.03.038>

VanderBroek-Stice, L., Stojek, M. K., Beach, S. R., & MacKillop, J. (2017). Multidimensional assessment of impulsivity in relation to obesity and food addiction. *Appetite, 112*, 59-68.

<https://doi.org/10.1016/j.appet.2017.01.009>

van Eeden, A. E., van Hoeken, D., & Hoek, H. W. (2021). Incidence, prevalence and mortality of anorexia nervosa and bulimia nervosa. *Current Opinion in Psychiatry, 34*(6), 515-524.

<https://doi.org/10.1097/YCO.0000000000000739>

Vardar, E., & Erzenin, M. (2011). Prevalence rates and psychiatric comorbidities of eating disorders in adolescents. A two-stage community-based survey. *Turkish Journal of Psychiatry, 22*, 205–212.

Vargas, T., Maloney, J., Gupta, T., Damme, K. S., Kelley, N. J., & Mittal, V. A. (2019). Measuring facets of reward sensitivity, inhibition, and impulse control in individuals with problematic Internet use. *Psychiatry Research, 275*, 351-358.

<https://doi.org/10.1016/j.psychres.2019.03.032>

Vilca, L. W., & Vallejos, M. (2015). Construction of the risk of addiction to social networks scale (Cr. ARS). *Computers in Human Behavior, 48*, 190-198.

<https://doi.org/10.1016/j.chb.2015.01.049>

Vogel, V., Kollei, I., Duka, T., Snagowski, J., Brand, M., Müller, A., & Loeber, S. (2018). Pavlovian-to-instrumental transfer: A new paradigm to assess pathological mechanisms with regard to the use of Internet applications. *Behavioural Brain Research, 347*, 8-16.

<https://doi.org/10.1016/j.bbr.2018.03.009>

Vohs, K. & Faber, R. (2003). Self-regulation and impulsive spending patterns. *Advances in Consumer Research, 30*, 125–126.

- Volkow, N. D., Wang, G. J., Fowler, J. S., Tomasi, D., & Baler, R. (2012). Food and drug reward: Overlapping circuits in human obesity and addiction. *Current Topics in Behavioral Neurosciences*, *11*, 1–24. https://doi.org/10.1007/7854_2011_169
- Vollmer, C., Randler, C., Horzum, M. B., & Ayas, T. (2014). Computer game addiction in adolescents and its relationship to chronotype and personality. *Sage Open*, *4*, 1-9. <https://doi.org/10.1177/2158244013518054>
- Voon, V., Mole, T. B., Banca, P., Porter, L., Morris, L., Mitchell, S., Lapa, T. R., Karr, J., Harrison, N. A., Potenza, M. N., & Irvine, M. (2014). Neural correlates of sexual cue reactivity in individuals with and without compulsive sexual behaviours. *PLoS One*, *9*(7), e102419. <https://doi.org/10.1371/journal.pone.0102419>
- Voros, F. (2009). The invention of addiction to pornography. *Sexologies*, *18*(4), 243-246. <https://doi.org/10.1016/j.sexol.2009.09.007>
- Wang, C-W., Ho, R. T. H., Chan, C. L. W., & Tse, S. (2015). Exploring personality characteristics of Chinese adolescents with internet-related addictive behaviors: Trait differences for gaming addiction and social networking addiction. *Addictive Behaviors*, *42*, 32–35. <https://doi.org/10.1016/j.addbeh.2014.10.039>
- Wang, J. L., Wang, H. Z., Gaskin, J., & Wang, L. H. (2015). The role of stress and motivation in problematic smartphone use among college students. *Computers in Human Behavior*, *53*, 181-188. <https://doi.org/10.1016/j.chb.2015.07.005>
- Wang, J., Wang, P., Yang, X., Zhang, G., Wang, X., Zhao, F., ... & Lei, L. (2019). Fear of missing out and procrastination as mediators between sensation seeking and adolescent smartphone addiction. *International Journal of Mental Health and Addiction*, *17*, 1049-1062. <https://doi.org/10.1007/s11469-019-00106-0>
- Wang, M., & Saudino, K. J. (2011). Emotion regulation and stress. *Journal of Adult Development*, *18*(2), 95-103. <https://doi.org/10.1007/s10804-010-9114-7>

- Wang, Q., Kou, Z., Du, Y., Wang, K., & Xu, Y. (2021). Academic procrastination and negative emotions among adolescents during the COVID-19 pandemic: The mediating and buffering effects of online-shopping addiction. *Frontiers in Psychology, 12*, e789505. <https://doi.org/10.3389/fpsyg.2021.789505>
- Wang, X., Ali, F., Tauni, M. Z., Zhang, Q., & Ahsan, T. (2022). Effects of hedonic shopping motivations and gender differences on compulsive online buyers. *Journal of Marketing Theory and Practice, 30*(1), 120-135. <https://doi.org/10.1080/10696679.2021.1894949>
- Wardle, H., Moody, A., Griffiths, M., Orford, J., & Volberg, R. (2011). Defining the online gambler and patterns of behaviour integration: Evidence from the British Gambling Prevalence Survey 2010. *International Gambling Studies, 11*(3), 339-356. <https://doi.org/10.1080/14459795.2011.628684>
- Wartberg, L., Kriston, L., & Thomasius, R. (2020). Internet gaming disorder and problematic social media use in a representative sample of German adolescents: Prevalence estimates, comorbid depressive symptoms and related psychosocial aspects. *Computers in Human Behavior, 103*, 31-36. <https://doi.org/10.1016/j.chb.2019.09.014>
- Watson, S., Liddell Jr, P., Moore, R. S., & Eshee Jr, W. D. (2004). The legalization of Internet gambling: A consumer protection perspective. *Journal of Public Policy & Marketing, 23*(2), 209-213. <https://doi.org/10.1509/jppm.23.2.209.51401>
- Waxman, S. E. (2009). A systematic review of impulsivity in eating disorders. *European Eating Disorders Review: The Professional Journal of the Eating Disorders Association, 17*(6), 408-425. <https://doi.org/10.1002/erv.952>
- Wegmann, E., Müller, S. M., Ostendorf, S., & Brand, M. (2018). Highlighting Internet-communication disorder as further Internet-use disorder when considering neuroimaging studies. *Current Behavioral Neuroscience Reports, 5*(4), 295-301. <https://doi.org/10.1007/s40473-018-0164-7>

- Wegmann, E., Oberst, U., Stodt, B., & Brand, M. (2017). Online-specific fear of missing out and Internet-use expectancies contribute to symptoms of Internet-communication disorder. *Addictive Behaviors Reports*, *5*, 33-42.
<https://doi.org/10.1016/j.abrep.2017.04.001>
- Welch, E., Jangmo, A., Thornton, L. M., Norring, C., von Hausswolff-Juhlin, Y., Herman, B. K., ... & Bulik, C. M. (2016). Treatment-seeking patients with binge-eating disorder in the Swedish national registers: Clinical course and psychiatric comorbidity. *BMC Psychiatry*, *16*(1), e163. <https://doi.org/10.1186/s12888-016-0840-7>
- Wenzel, H. G., Bakken, I. J., Johansson, A., Göttestam, K. G., & Øren, A. (2009). Excessive computer game playing among Norwegian adults: Self-reported consequences of playing and association with mental health problems. *Psychological Reports*, *105*, 1237-1247.
<https://doi.org/10.2466/PR0.105.F.1237-1247>
- Wéry, A., & Billieux, J. (2016). Online sexual activities: An exploratory study of problematic and non-problematic usage patterns in a sample of men. *Computers in Human Behavior*, *56*, 257-266. <https://doi.org/10.1016/j.chb.2015.11.046>
- Wéry, A., & Billieux, J. (2017). Problematic cybersex: Conceptualization, assessment, and treatment. *Addictive Behaviors*, *64*, 238-246.
<https://doi.org/10.1016/j.addbeh.2015.11.007>
- Wéry, A., Canale, N., Bell, C., Duvivier, B., & Billieux, J. (2020). Problematic online sexual activities in men: The role of self-esteem, loneliness, and social anxiety. *Human Behavior and Emerging Technologies*, *2*(3), 217-226. <https://doi.org/10.1002/hbe2.193>
- Wéry, A., Deleuze, J., Canale, N., & Billieux, J. (2018). Emotionally laden impulsivity interacts with affect in predicting addictive use of online sexual activity in men. *Comprehensive Psychiatry*, *80*, 192-201.
<https://doi.org/10.1016/j.comppsy.2017.10.004>

- Wijayanti, N. (2018). Mukbang: A ludic way to have a meal. Retrieved April 1, 2019, from:
<https://www.diggitmagazine.com/column/mukbang-ludic-way-have-meal>.
- Wikipedia (2019). List of newspapers in the United Kingdom. Retrieved 18 October, 2019,
from: https://en.wikipedia.org/wiki/List_of_newspapers_in_the_United_Kingdom.
- Wilfley, D. E., Wilson, G. T., & Agras, W. S. (2003). The clinical significance of binge eating disorder. *International Journal of Eating Disorders*, 34(1), 96-106.
<https://doi.org/10.1002/eat.10209>
- Williams, B., Onsmann, A., & Brown, T. (2010). Exploratory factor analysis: A five-step guide for novices. *Australasian Journal of Paramedicine*, 8, 1-13.
<https://doi.org/10.33151/ajp.8.3.93>
- Winkler, A., Dörsing, B., Rief, W., Shen, Y., & Glombiewski, J. A. (2013). Treatment of internet addiction: A meta-analysis. *Clinical Psychology Review*, 33(2), 317-329.
<https://doi.org/10.1016/j.cpr.2012.12.005>
- Wolniczak, I., Cáceres-DelAguila, J. A., Palma-Ardiles, G., Arroyo, K. J., Solís-Visscher, R., Paredes-Yauri, S., ... & Bernabe-Ortiz, A. (2013). Association between Facebook dependence and poor sleep quality: A study in a sample of undergraduate students in Peru. *PloS One*, 8(3), e59087. <https://doi.org/10.1371/journal.pone.0059087>
- Wolniewicz, C. A., Rozgonjuk, D., & Elhai, J. D. (2020). Boredom proneness and fear of missing out mediate relations between depression and anxiety with problematic smartphone use. *Human Behavior and Emerging Technologies*, 2(1), 61-70.
<https://doi.org/10.1002/hbe2.159>
- Woo, S. (2018). Mukbang is changing digital communications. *Anthropology News*, 59, 90-94.
<https://doi.org/10.1111/AN.1048>

- Wood, R. T., & Griffiths, M. D. (2007). A qualitative investigation of problem gambling as an escape-based coping strategy. *Psychology and Psychotherapy: Theory, Research and Practice*, 80, 107-125. <https://doi.org/10.1348/147608306X107881>
- World Health Organization. (2015). *Public health implications of excessive use of the internet, computers, smartphones and similar electronic devices: Meeting report, Main Meeting Hall, Foundation for Promotion of Cancer Research, National Cancer Research Centre, Tokyo, Japan, 27-29 August 2014*. Geneva: World Health Organization.
- World Health Organization (2018). *ICD-11 Beta Draft: Gaming Disorder*. Retrieved 15 August, 2022, from <https://www.who.int/news-room/questions-and-answers/item/addictive-behaviours-gaming-disorder>.
- Workman, L. (2010). Compulsive buying: A theoretical framework. *Journal of Business Inquiry*, 9(1), 89-126.
- Wu, A. M., Chen, J. H., Tong, K. K., Yu, S., & Lau, J. T. (2018). Prevalence and associated factors of Internet gaming disorder among community dwelling adults in Macao, China. *Journal of Behavioral Addictions*, 7(1), 62-69. <https://doi.org/10.1556/2006.7.2018.12>
- Wu, L. L., Potenza, M. N., Zhou, N., Kober, H., Shi, X. H., Yip, S. W., ... & Zhang, J. T. (2020). A role for the right dorsolateral prefrontal cortex in enhancing regulation of both craving and negative emotions in internet gaming disorder: A randomized trial. *European Neuropsychopharmacology*, 36, 29-37. <https://doi.org/10.1016/j.euroneuro.2020.04.003>
- Xu, J., Harper, J. A., Van Enkevort, E. A., Latimer, K., Kelley, U., & McAdams, C. J. (2017). Neural activations are related to body-shape, anxiety, and outcomes in adolescent anorexia nervosa. *Journal of Psychiatric Research*, 87, 1-7. <https://doi.org/10.1016/j.euroneuro.2020.04.003>
- Yang, W., Morita, N., Ogai, Y., Saito, T., & Hu, W. (2021). Associations between sense of coherence, psychological distress, escape motivation of internet use, and internet

- addiction among Chinese college students: A structural equation model. *Current Psychology*. Advance online publication. <https://doi.org/10.1007/s12144-021-02257-7>
- Yang, Z., Griffiths, M. D., Yan, Z., & Xu, W. (2021). Can watching online videos be addictive? A qualitative exploration of online video watching among Chinese young adults. *International Journal of Environmental Research and Public Health*, 18(14), e7247. <https://doi.org/10.3390/ijerph18147247>
- Yokum, S., Gearhardt, A. N., Harris, J. L., Brownell, K. D., & Stice, E. (2014). Individual differences in striatum activity to food commercials predict weight gain in adolescents. *Obesity*, 22(12), 2544-2551. <https://doi.org/10.1002/oby.20882>
- You, T. (2018). Bizarre trend sees Chinese vloggers flocking to broadcast themselves eating ice as millions of people tune in just to hear the crunch. *Daily Mail*, February 8, 2018. Retrieved October 16, 2019, from: <https://www.dailymail.co.uk/news/article-5367391/Eating-crunchy-ice-new-social-media-trend-China.html>
- Young, K. S. (1996, August). *Internet addiction: The emergence of a new clinical disorder*. Poster presented at the 104th American Psychological Association Annual Convention, Toronto, Canada.
- Young, K. S. (1998). Internet addiction: The emergence of a new clinical disorder. *Cyberpsychology and Behavior*, 1(3), 237-244. <https://doi.org/10.1089/cpb.1998.1.237>
- Young, K. S., & Rodgers, R. C. (1998, April). *Internet addiction: Personality traits associated with its development*. Paper presented at the 69th Annual Meeting of the Eastern Psychological Association. Retrieved September 10, 2020, from: <https://www.healthyplace.com/addictions/center-for-internet-addiction-recovery/personality-traits-linked-to-internet-addiction>
- Yule, M. A., Brotto, L. A., & Gorzalka, B. B. (2017). Sexual fantasy and masturbation among asexual individuals: An in-depth exploration. *Archives of Sexual Behavior*, 46, 311-328.

<https://doi.org/10.1007/s10508-016-0870-8>

Yurdagül, C., Kircaburun, K., Emirtekin, E., Wang, P., & Griffiths, M. D. (2021). Psychopathological consequences related to problematic Instagram use among adolescents: The mediating role of body image dissatisfaction and moderating role of gender. *International Journal of Mental Health and Addiction*, *19*(5), 1385-1397. <https://doi.org/10.1007/s11469-019-00071-8>

Zanella, E., & Lee, E. (2022). Integrative review on psychological and social risk and prevention factors of eating disorders including anorexia nervosa and bulimia nervosa: Seven major theories. *Heliyon*, *8*(11), e11422. <https://doi.org/10.1016/j.heliyon.2022.e11422>

Zanetta-Dauriat, F., Zermatten, A., Billieux, J., Thorens, G., Bondolfi, G., Zullino, D., & Khazaal, Y. (2011). Motivations to play specifically predict excessive involvement in Massively Multiplayer Online Role-Playing Games (MMORPGs): Evidence through an online survey. *European Addiction Research*, *17*, 185-189. <https://doi.org/10.1159/000326070>

Zawertailo, L., Attwells, S., deRuiter, W. K., Le, T. L., Dawson, D., & Selby, P. (2020). Food addiction and tobacco use disorder: Common liability and shared mechanisms. *Nutrients*, *12*(12), 3834. <https://doi.org/10.3390/nu12123834>

Zhang, M. W., Lim, R. B., Lee, C., & Ho, R. (2018). Prevalence of internet addiction in medical students: A meta-analysis. *Academic Psychiatry*, *42*(1), 88-93. <https://doi.org/10.1007/s40596-017-0794-1>

Zheng, Y., Yang, X., Liu, Q., Chu, X., Huang, Q., & Zhou, Z. (2020). Perceived stress and online compulsive buying among women: A moderated mediation model. *Computers in Human Behavior*, *103*, 13-20. <https://doi.org/10.1016/j.chb.2019.09.012>

- Zhou, F., Montag, C., Sariyska, R., Lachmann, B., Reuter, M., Weber, B., ... & Becker, B. (2019). Orbitofrontal gray matter deficits as marker of Internet gaming disorder: Converging evidence from a cross-sectional and prospective longitudinal design. *Addiction Biology*, *24*(1), 100-109. <https://doi.org/10.1111/adb.12570>
- Zhou, M. (2020). Gender differences in procrastination: The role of personality traits. *Current Psychology*, *39*, 1445-1453. <https://doi.org/10.1007/s12144-018-9851-5>
- Ziauddeen, H., & Fletcher, P. C. (2013). Is food addiction a valid and useful concept? *Obesity Reviews*, *14*(1), 19-28. <https://doi.org/10.1111/j.1467-789X.2012.01046.x>
- Ziauddeen, N., Roderick, P. J., Santorelli, G., Wright, J., & Alwan, N. A. (2022). Childhood overweight and obesity at the start of primary school: External validation of pregnancy and early-life prediction models. *PLoS Global Public Health*, *2*(6), e0000258. <https://doi.org/10.1371/journal.pgph.0000258>
- Zimbardo, P., Wilson, G., & Coulombe, N. (2016). How porn is messing with your manhood. *Skeptic*, *21*, 22-27.
- Zuckerman, M., Kuhlman, D. M., Joireman, J., Teta, P., & Kraft, M. (1993). A comparison of three structural models for personality: The big three, the big five, and the alternative five. *Journal of Personality and Social Psychology*, *65*, 757. <https://psycnet.apa.org/doi/10.1037/0022-3514.65.4.757>

APPENDICES

Appendix I

Declaration of Collaborative Work

Literature review

Kircaburun, K., Harris, A., Calado, F., & Griffiths, M. D. (2021). The psychology of mukbang watching: A scoping review of the academic and non-academic literature.

International Journal of Mental Health and Addiction, 19, 1190-1213.

<https://doi.org/10.1007/s11469-019-00211-0> (Chapter 2)

Contribution of the first author (Kagan Kircaburun) to this literature review:

- Initiation of review
- Development of key ideas
- Literature organisation
- Literature analysis
- Write-up
- Implementation of co-authors' feedback

Empirical chapters:

Kircaburun, K., Stavropoulos, V., Harris, A., Calado, F., Emirtekin, E., & Griffiths, M. D. (2021). Development and validation of the Mukbang Addiction Scale. *International Journal of Mental Health and Addiction*, *19*, 1031-1044. <https://doi.org/10.1007/s11469-019-00210-1>
(Chapter 4)

Contribution of the first author (Kagan Kircaburun) to this study:

- Initiation of research
- Development of key ideas
- Development of the survey
- Participant recruitment
- Data collection
- Data cleaning
- Data analysis
- Writing-up
- Implementation of co-authors' feedback

Kircaburun, K., Harris, A., Calado, F., & Griffiths, M. D. (in progress). Development and validation of Problematic Mukbang Watching Scale and Mukbang Watching Motives Scale: A cross-sectional study with adult mukbang watchers. (Chapter 5)

Contribution of the first author (Kagan Kircaburun) to this study:

- Initiation of research
- Development of key ideas
- Development of the survey
- Participant recruitment

- Data collection
- Data cleaning
- Data analysis
- Writing-up
- Implementation of co-authors' feedback

Kircaburun, K., Balta, S., Emirtekin, E., Tosuntas, Ş. B., Demetrovics, Z., & Griffiths, M. D. (2021). Compensatory usage of the internet: The case of mukbang watching on YouTube. *Psychiatry Investigation*, 18(4), 269-276. <https://doi.org/10.30773/pi.2019.0340> (Chapter 6)

Contribution of the first author (Kagan Kircaburun) to this study:

- Initiation of research
- Development of key ideas
- Development of the survey
- Participant recruitment
- Data collection
- Data cleaning
- Data analysis
- Writing-up
- Implementation of co-authors' feedback

Kircaburun, K., Harris, A., Calado, F., & Griffiths, M. D. (in progress). Emotional and psychological impairment correlates of addictive mukbang watching. (Chapter 7)

Contribution of the first author (Kagan Kircaburun) to this study:

- Initiation of research

- Development of key ideas
- Development of the survey
- Participant recruitment
- Data collection
- Data cleaning
- Data analysis
- Writing-up
- Implementation of co-authors' feedback

Kircaburun, K., Yurdagül, C., Kuss, D., Emirtekin, E., & Griffiths, M. D. (2021). Problematic mukbang watching and its relationship to disordered eating and internet addiction: A pilot study among emerging adult mukbang watchers. *International Journal of Mental Health and Addiction*, 19, 2160-2169. <https://doi.org/10.1007/s11469-020-00309-w> (Chapter 8)

Contribution of the first author (Kagan Kircaburun) to this study:

- Initiation of research
- Development of key ideas
- Development of the survey
- Participant recruitment
- Data collection
- Data cleaning
- Data analysis
- Writing-up
- Implementation of co-authors' feedback

Kircaburun, K., March, E., Balta, S., Emirtekin, E., Kışla, T., & Griffiths, M. D. (2022). The role of procrastination between personality traits and addictive mukbang watching among

emerging adults. *SAGE Open*, 12(1), Advanced online publication.

<https://doi.org/10.1177/21582440221085006>. (Chapter 9)

Contribution of the first author (Kagan Kircaburun) to this study:

- Initiation of research
- Development of key ideas
- Development of the survey
- Participant recruitment
- Data collection
- Data cleaning
- Data analysis
- Writing-up
- Implementation of co-authors' feedback

Kircaburun, K., Harris, A., Calado, F., & Griffiths, M. D. (in progress). Addictive symptoms of mukbang watching: A qualitative interview study. (Chapter 10)

Contribution of the first author (Kagan Kircaburun) to this study:

- Initiation of research
- Development of key ideas
- Development of the survey
- Participant recruitment
- Data collection
- Data cleaning
- Data analysis
- Writing-up
- Implementation of co-authors' feedback

Appendix II

Scales used in the study presented in Chapter 4 (Development and validation of the Mukbang Addiction Scale)

Demographic information

1. Gender:

Male _____ Female _____

2. Grade

1 _____

2 _____

3 _____

4 _____

3. Faculty

Economics and administrative sciences _____

Communication _____

Humanities and social sciences _____

Business administration _____

Vocational school _____

Architecture _____

Engineering _____

4. Body mass index

Underweight _____

Normal weight _____

Overweight _____

Obese _____

Extremely obese_____

5. Frequency of daily use

No daily use_____

0-1 hours_____

1-2 hours_____

2-3 hours_____

3-4 hours_____

More than 4 hours_____

Mukbang Addiction Scale

How often during the last year have you... **1= Very rarely 2=Rarely 3= Sometimes 4= Often 5= Very often**

1. Spent a lot of time thinking about mukbang or planned watching mukbang?	1	2	3	4	5
2. Felt an urge to watch mukbang more and more?	1	2	3	4	5
3. Watched mukbang in order to forget about personal problems?	1	2	3	4	5
4. Tried to cut down on the mukbang watching without success?	1	2	3	4	5
5. Become restless or troubled if you have been prohibited from watching mukbang?	1	2	3	4	5
6. Watched mukbang so much that it has had a negative impact on your job/studies?	1	2	3	4	5

Appendix III

Scales used in the study presented in Chapter 5 (Development and validation of Problematic Mukbang Watching Scale and Mukbang Watching Motives Scale)

Demographic information

1. Gender:

Male _____ Female _____ Other _____

2. Ethnicity:

Caucasian _____

Black/African _____

Hispanic/Latino _____

Asian _____

Mixed _____

3. Daily time:

Rarely watch mukbang _____

Between 1-60 minutes _____

Between 61-120 minutes _____

Between 121-180 minutes _____

Between 181-240 minutes _____

4. Daily number of videos:

Rarely watch mukbang _____

1-2 _____

3-5 _____

6-8 _____

More than 8_____

5. Number of mukbangers followed:

0_____

1-2_____

3-5_____

6-8_____

More than 8_____

Problematic Mukbang Watching Scale (PMWS)

1= Never 2= Rarely 3= Sometimes 4= Often 5= Always

1. I sometimes think about mukbang videos I previously watched and/or plan the next time I will watch mukbang again.	1	2	3	4	5
2. I look forward to the time I will be able to watch a newly uploaded mukbang video.	1	2	3	4	5
3. I am usually depressed or annoyed when I can't watch mukbang, and I feel better when I start watching mukbang.	1	2	3	4	5
4. I feel bad if I, for different reasons, can not watch mukbang for a long period of time.	1	2	3	4	5
5. I often spend more time on watching mukbang than I initially planned.	1	2	3	4	5
6. I feel the need to watch mukbang for longer periods in order to feel satisfied.	1	2	3	4	5
7. I sometimes try to reduce the time I spend on watching mukbang but fail.	1	2	3	4	5
8. I occasionally decide not to watch mukbang but eventually begin watching them again.	1	2	3	4	5
9. I sometimes prefer watching mukbang rather than meeting friends or participate in hobbies that I used to enjoy before.	1	2	3	4	5
10. I sometimes go to bed later than I should because I cannot stop watching mukbang.	1	2	3	4	5
11. I tried to hide the time I spent on watching mukbang from my family.	1	2	3	4	5
12. I do not want my friends or other important people to know how much I watch mukbang.	1	2	3	4	5
13. I sometimes watch mukbang to relieve a negative mood.	1	2	3	4	5
14. I try to forget about real life problems via watching mukbang.	1	2	3	4	5
15. I risked losing a significant relationship due to watching mukbang.	1	2	3	4	5

Denial: 11,12; Compulsion: 3,4,9,15; Loss of control: 1,2,5,6,7,8,10,13,14

Motives For Watching Mukbang Scale (MWMS)

		1= Never	2= Rarely	3= Sometimes	4= Often	5= Always
1.	I watch mukbang to have a virtual satisfaction of eating.	1	2	3	4	5
2.	I watch mukbang to feel less lonely.	1	2	3	4	5
3.	I watch mukbang to escape from boredom.	1	2	3	4	5
4.	I watch mukbang for recreation.	1	2	3	4	5
5.	I watch mukbang to learn about new recipes.	1	2	3	4	5
6.	I watch mukbang only because my favorite YouTubers make them.	1	2	3	4	5
7.	I watch mukbang to compensate for my hunger.	1	2	3	4	5
8.	I watch mukbang to forget about my problems.	1	2	3	4	5
9.	I watch mukbang to have fun.	1	2	3	4	5
10.	I watch mukbang as a sexual fantasy.	1	2	3	4	5
11.	I watch mukbang to discover novel foods from different cultures.	1	2	3	4	5
12.	I watch mukbang so that I can see and listen to my favorite YouTubers.	1	2	3	4	5
13.	I watch mukbang to satisfy my cravings for different food that I am not allowed to eat.	1	2	3	4	5
14.	I watch mukbang to get away from the daily hassles.	1	2	3	4	5
15.	I watch mukbang because it is entertaining.	1	2	3	4	5
16.	I watch mukbang because watching someone eat is sexually arousing.	1	2	3	4	5
17.	I watch mukbang to find out about new food products.	1	2	3	4	5
18.	I watch mukbang but I am more focused on the mukbanger than the food.	1	2	3	4	5
19.	I watch mukbang to be part of an online social community.	1	2	3	4	5
20.	I watch mukbang to avoid my unpleasant reality.	1	2	3	4	5

21.	I watch mukbang because I enjoy it.	1	2	3	4	5
22.	I watch mukbang to fantasize that I am feeding someone.	1	2	3	4	5
23.	I watch mukbang so that I can listen to what mukbangers have to tell.	1	2	3	4	5
24.	I watch mukbang to avoid actual eating.	1	2	3	4	5
25.	I watch mukbang because it relaxes me.	1	2	3	4	5
26.	I watch mukbang videos of people that I feel sexually attracted to.	1	2	3	4	5
27.	I watch mukbang when I have nothing better to do.	1	2	3	4	5

Entertainment: 3,4,9,15,21,25,27; Sexual reasons: 10,16,22,26; Compensation: 1,7,13,24;
Discovery: 5,11,17; Groupie reasons: 6,12,18,23; Escape: 2,8,14,19,20

Appendix IV

Scales used in the study presented in Chapter 6 (Compensatory usage of the internet:

The case of mukbang watching on YouTube)

Problematic YouTube Use Scale

How often during the last year have you... **1= Very rarely 2=Rarely 3= Sometimes 4= Often 5= Very often**

1. Spent a lot of time thinking about mukbang or planned using YouTube?	1	2	3	4	5
2. Felt an urge to watch use YouTube more and more?	1	2	3	4	5
3. Used YouTube in order to forget about personal problems?	1	2	3	4	5
4. Tried to cut down on the YouTube use without success?	1	2	3	4	5
5. Become restless or troubled if you have been prohibited from using YouTube?	1	2	3	4	5
6. Used YouTube so much that it has had a negative impact on your job/studies?	1	2	3	4	5

The Short Depression-Happiness Scale

In the past seven days...

1= Never 2=Rarely 3= Sometimes 4= Often

1. I felt dissatisfied with my life	1	2	3	4
2. I felt cheerless	1	2	3	4
3. I felt that life was meaningless	1	2	3	4

UCLA- Loneliness Scale-Short Form

In the past seven days...

1= Never 2=Rarely 3= Sometimes 4= Often

-
- | | | | | |
|--|---|---|---|---|
| 1. I feel in tune with the people around me. | 1 | 2 | 3 | 4 |
| 2. No one really knows me well. | 1 | 2 | 3 | 4 |
| 3. I can find companionship when I want to. | 1 | 2 | 3 | 4 |
| 4. People are around me but not with me. | | | | |
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Appendix V

Scales used in the study presented in Chapter 7 (Emotional and psychological impairment correlates of addictive mukbang watching)

Demographic information

1. Gender:

Male _____ Female _____ Other _____

2. Ethnicity:

Caucasian _____

Black/African _____

Hispanic/Latino _____

Asian _____

Mixed _____

Other _____

3. Ethnicity:

United Kingdom _____

United States of America _____

Canada _____

South Africa _____

Europe _____

Australia _____

4. Consider themselves as regular mukbang watchers:

Yes _____ No _____

5. Daily time:

Rarely watch mukbang _____

Between 1-60 minutes _____

Between 61-120 minutes_____

Between 121-180 minutes_____

Between 181-240 minutes_____

6. Daily number of videos:

Rarely watch mukbang_____

1-2_____

3-5_____

6-8_____

More than 8_____

Difficulties in Emotion Regulation Scale

1= Almost never 2=Sometimes 3= About half the time 4= Most of the time 5= Almost always

1. I have difficulty making sense out of my feelings.	1	2	3	4	5
2. I am confused about how I feel.	1	2	3	4	5
3. When I'm upset, I have difficulty getting work done.	1	2	3	4	5
4. When I'm upset, I become out of control.	1	2	3	4	5
5. When I'm upset, I believe that I will remain that way for a long time.	1	2	3	4	5
6. When I'm upset, I believe that I'll end up feeling very depressed.	1	2	3	4	5
7. When I'm upset, I have difficulty focusing on other things	1	2	3	4	5
8. When I'm upset, I feel out of control.	1	2	3	4	5
9. When I'm upset, I feel ashamed with myself for feeling that way.	1	2	3	4	5
10. When I'm upset, I feel like I am weak.	1	2	3	4	5
11. When I'm upset, I have difficulty controlling my behaviors.	1	2	3	4	5
12. When I'm upset, I believe that there is nothing I can do to make myself feel better.	1	2	3	4	5
13. When I'm upset, I become irritated with myself for feeling that way.	1	2	3	4	5
14. When I'm upset, I start to feel very bad about myself.	1	2	3	4	5
15. When I'm upset, I have difficulty thinking about anything else.	1	2	3	4	5

16. When I'm upset, my emotions feel overwhelming.	1	2	3	4	5
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Depression Anxiety Stress Scale

In the past seven days...

1= Never 2=Rarely 3= Sometimes 4= Almost always

1. I found it hard to wind down	1	2	3	4
2. I was aware of dryness of my mouth	1	2	3	4
3. I couldn't seem to experience any positive feeling at all	1	2	3	4
4. I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)	1	2	3	4
5. I found it difficult to work up the initiative to do things	1	2	3	4
6. I tended to over-react to situations	1	2	3	4
7. I experienced trembling (e.g. in the hands)	1	2	3	4
8. I felt that I was using a lot of nervous energy	1	2	3	4
9. I was worried about situations in which I might panic and make a fool of myself	1	2	3	4
10. I felt that I had nothing to look forward to	1	2	3	4
11. I found myself getting agitated	1	2	3	4
12. I found it difficult to relax	1	2	3	4
13. I felt down-hearted and blue	1	2	3	4
14. I was intolerant of anything that kept me from getting on with what I was doing	1	2	3	4
15. I felt I was close to panic	1	2	3	4
16. I was unable to become enthusiastic about anything	1	2	3	4
17. I felt I wasn't worth much as a person	1	2	3	4
18. I felt that I was rather touchy	1	2	3	4
19. I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)	1	2	3	4
20. I felt scared without any good reason	1	2	3	4
21. I felt that life was meaningless	1	2	3	4

Short UPPS-P Impulsive Behavior Scale

	1= Strongly disagree 2=Disagree 3= Agree 4= Strongly agree			
1. When I feel bad, I will often do things I later regret in order to make myself feel better now.	1	2	3	4
2. Sometimes when I feel bad, I can't seem to stop what I am doing even though it is making me feel worse.	1	2	3	4
3. When I am upset I often act without thinking	1	2	3	4
4. When I feel rejected, I will often say things that I later regret.	1	2	3	4
5. I generally like to see things through to the end. (R)	1	2	3	4
6. Unfinished tasks really bother me. (R)	1	2	3	4
7. Once I get going on something I hate to stop. (R)	1	2	3	4
8. I finish what I start.	1	2	3	4
9. My thinking is usually careful and purposeful.	1	2	3	4
10. I like to stop and think things over before I do them. (R)	1	2	3	4
11. I tend to value and follow a rational, "sensible" approach to things. (R)	1	2	3	4
12. I usually think carefully before doing anything. (R)	1	2	3	4
13. I quite enjoy taking risks.	1	2	3	4
14. I welcome new and exciting experiences and sensations, even if they are a little frightening and unconventional.	1	2	3	4
15. I would like to learn to fly an airplane.	1	2	3	4
16. I would enjoy the sensation of skiing very fast down a high mountain slope.	1	2	3	4
17. When I am in great mood, I tend to get into situations that could cause me problems.	1	2	3	4
18. I tend to lose control when I am in a great mood.	1	2	3	4
19. Others are shocked or worried about the things I do when I am feeling very excited.	1	2	3	4
20. I tend to act without thinking when I am really excited.	1	2	3	4

Appendix VI

Scales used in the study presented in Chapter 8 (Addictive mukbang watching and its relationship to disordered eating and internet addiction: A pilot study among emerging adult mukbang watchers)

Demographic information

1. Gender:

Male _____ Female _____

Bergen Internet Addiction Scale

How often during the last year have you... **1= Very rarely 2=Rarely 3= Sometimes 4= Often 5= Very often**

1. Spent a lot of time thinking about mukbang or planned using internet?	1	2	3	4	5
2. Felt an urge to watch use internet more and more?	1	2	3	4	5
3. Used internet in order to forget about personal problems?	1	2	3	4	5
4. Tried to cut down on the internet use without success?	1	2	3	4	5
5. Become restless or troubled if you have been prohibited from using internet?	1	2	3	4	5
6. Used internet so much that it has had a negative impact on your job/studies?	1	2	3	4	5

SCOFF Eating Disorders Scale

1= No 2=Yes

1. Do you make yourself sick because you feel uncomfortably full?	1	2
2. Do you worry that you have lost control over how much you eat?	1	2
3. Have you recently lost more than one stone (6.35 kg) in a three-month period?	1	2
4. Do you believe yourself to be fat when others say you are too thin?	1	2

5. Would you say food dominates your life?

1 2

Appendix VII

Scales used in the study presented in Chapter 9 (The role of procrastination between personality traits and addictive mukbang watching among emerging adults)

Demographic information

1. Gender:

Male _____ Female _____

The Unintentional Procrastination Scale

1= Do not agree 2=Agree slightly 3= Agree moderately 4= Agree very much

1. I rarely begin tasks as soon as I am given them, even if I intend to.	1	2	3	4
2. Often I mean to be doing something, but it seems that sometimes I just don't get round to it.	1	2	3	4
3. I often seem to start things and don't seem to finish them off.	1	2	3	4
4. I intend to get things done, but sometimes this just does not happen.	1	2	3	4
5. Often I will set myself a date by which I intend to get something done or make a decision, but miss the deadline.	1	2	3	4
6. I really want to get things finished in time, but I rarely do.	1	2	3	4

Dark Personality Traits

1= Absolutely disagree 7= Absolutely agree

1. I am a narcissist (e.g., selfish, self-centred)	1	2	3	4	5	6	7
2. I am Machiavellian (e.g., manipulate and exploit others towards their own end, deceit or lie to get their way)	1	2	3	4	5	6	7
3. I am a psychopath (e.g., callous, insensitive, lack remorse, not concerning about morality of their actions)	1	2	3	4	5	6	7
4. I am sadistic (e.g., enjoying inflicting pain on others, tend to intentionally hurt others)	1	2	3	4	5	6	7
5. I am spiteful (e.g., willing to harm oneself in order to hurt others)	1	2	3	4	5	6	7

Big Five Personality Traits

1= Absolutely disagree 7= Absolutely agree

1. I am an extrovert (e.g., not outgoing and sociable, reserved, introverted in social situations and relations)	1	2	3	4	5	6	7
2. I am conscientious (e.g., being trustworthy in doing tasks and duties, organised, planned, doing a thorough job)	1	2	3	4	5	6	7
3. I am open to new experience (e.g., being less conservative in life, being open to new experience, having an active imagination)	1	2	3	4	5	6	7
4. I am agreeable (e.g., not conflicting, understanding and easygoing in social relations)	1	2	3	4	5	6	7
5. I am neurotic (e.g., tends to find fault with others, easily irritated, emotionally unstable)	1	2	3	4	5	6	7

Appendix X

Interview Guide used in the study presented in Chapter 9 (Addictive symptoms of mukbang watching: A qualitative interview study)

1. What is your gender?
2. What is your age?
3. How and when did you start watching mukbang?
4. How much daily time do you spend watching mukbang on average?
5. How many mukbang videos do you watch every day on average? Do you watch mukbang videos of the same mukbangers or different ones?
6. How many different mukbangers do you regularly watch?
7. Some people, when they are not watching mukbang, fantasize about watching mukbang, think about previous mukbang videos that they watched, and/or anticipate the next time they will watch mukbang. What do you think about this? Do you experience these too?
8. Some people feel restless, irritable, anxious, and/or sad when they are unable to watch mukbang or watch mukbang less than usual? What do you think about this? Do you experience these too?
9. Some people feel the need to watch mukbang more often or watch mukbang for longer periods to feel that they watched enough. What do you think about this? Do you experience these too?
10. Some people try to reduce the time spent on watching mukbang or quit watching mukbang but fail. What do you think about this? Do you experience these too?
11. Some people prefer to watch mukbang rather than meet their friends or participate in hobbies and pastimes that they used to enjoy before. What do you think about this? Do you experience these too?
12. Some people watch mukbang a lot despite negative consequences (for instance losing sleep, not being able to do well in education or work, having arguments with your family or friends, and/or neglecting important duties). What do you think about this? Do you experience these too?
13. Some people try to keep their family, friends or other important people from knowing how much they watch mukbang or lie to them regarding their mukbang watching. What do you think about this? Do you experience these too?
14. Some people watch mukbang to relieve a negative mood (for instance helplessness, guilt, or anxiety). What do you think about this? Do you experience these too?
15. Some people risk or lose a significant relationship because of mukbang watching. What do you think about this? Do you experience these too?

16. Some people jeopardize their education or work performance because of mukbang watching. What do you think about this? Do you experience these too?