

Accepted Manuscript

Motivational processes and dysfunctional mechanisms of social media use among adolescents: A qualitative focus group study

Melina A. Throuvala, Mark D. Griffiths, Mike Rennoldson, Daria J. Kuss



PII: S0747-5632(18)30598-3

DOI: 10.1016/j.chb.2018.12.012

Reference: CHB 5834

To appear in: *Computers in Human Behavior*

Received Date: 18 July 2018

Accepted Date: 08 December 2018

Please cite this article as: Melina A. Throuvala, Mark D. Griffiths, Mike Rennoldson, Daria J. Kuss, Motivational processes and dysfunctional mechanisms of social media use among adolescents: A qualitative focus group study, *Computers in Human Behavior* (2018), doi: 10.1016/j.chb.2018.12.012

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

**Motivational processes and dysfunctional mechanisms of social media use among adolescents:
A qualitative focus group study**

Melina A. Throuvala ^{1*}, Mark D. Griffiths ¹, Mike Rennoldson ², Daria J. Kuss ¹

¹ *International Gaming Research Unit, Psychology Department, Nottingham Trent University, Nottingham, United Kingdom*

² *Psychology Department, Nottingham Trent University, Nottingham, United Kingdom*

* Corresponding author

E-mail: melina.throuvala2016@my.ntu.ac.uk

Title:

Motivational processes and dysfunctional mechanisms of social media use among adolescents: A qualitative focus group study

Highlights

- Qualitative focus groups were used to examine social media use motives
- Six motivational themes for social media use were identified
- Motives included emotional regulation and enhancement, and need for control
- The need for control appeared to be reinforced by FoMO and nomophobia
- Control phenomena may be implicated in compulsive use

Abstract

Childhood and adolescent experiences have undergone a major transition in interaction with digital technologies since the advent of smartphones. Following a needs assessment study, adolescent online uses and motivations for social networking site use were explored. Six focus groups (comprising 42 adolescent students of secondary schools in the UK) were recruited. Transcripts were analysed using thematic analysis. Six motivational themes emerged from the analysis, reflecting interactivity and need for control of content and relationships, exhibiting the dynamic nature of engagement with social networking sites: (i) symbiotic relationship with peers online via social media and smartphone attachment, (ii) digital omnipresence related to the need for control and loss of control, (iii) emotional regulation and enhancement, (iv) idealization versus normalization of self and others, (v) peer comparison and ego validation, and (vi) functionality - facilitation of communication functions. These findings offer an

understanding of the key drivers of normative adolescent social media behaviour that go beyond the theoretical associations with Uses and Gratifications Theory and Self-Determination Theory, suggesting an additional alternative motivational factor for social media use, that of need to control relationships, content, presentation and impressions. This need may be underlying FoMO and nomophobia and could therefore be responsible for increasing engagement or compulsive use. These findings shed light on cognitive-emotive aspects that may be implicated in problematic use and may inform interventions targeting excessive or problematic screen time and specific social media use aspects that merit scientific attention.

Keywords: social media use; social networking sites; social media addiction; motivations; adolescents; internet addiction

1. Introduction

Generation Z (born between 1995-2012) and Generation Alpha (born between 2013-2025) are the first generations to become immersed in technologies with active engagement in the production of digital media content, especially since the introduction of smartphones (Bobkowski, Shafer, & Ortiz, 2016; Twenge, Martin, & Campbell, 2018). Social networking sites (SNSs) constitute a new social milieu for adolescents that provide numerous opportunities and ways for diverse interaction (Kuss & Griffiths, 2017). Smartphones have facilitated access to SNSs, which account for a large part of overall adolescent screen time. Recent data indicate that 95% of US adolescents (aged 13-17 years) have access to smartphones and more than half have access to a tablet, with 45% reporting access almost constantly, and 44% several times a day (Pew Research Center, 2018a). In the UK (where the present study was conducted), 83% of 12-15 year olds have their own smartphone, 99% go online daily, and 26% mainly use

a smartphone to go online, while also reporting that this is the device they would miss the most out of all devices (Ofcom, 2017).

Social media use is a complementary and indispensable part of everyday adolescent life with an active engagement of versatile tools and applications, offering a wide range of services and functions for their users (Giannakos et al., 2013; Kuss & Griffiths, 2017). Social media is operationally defined as the sum of blogs, social networking sites (i.e., *Facebook*), micro blogs (i.e., *Twitter*), content sharing sites (i.e., *Instagram*, *Snapchat*), Wikis, and interactive video-gaming sites (i.e., Massive Multiplayer Online Games, e.g., *World of Warcraft*) that allow users to co-construct and share content (Kuss & Griffiths, 2017). Adolescents present a different usage profile from adults, where *Facebook* is no longer the platform of choice: recent usage data has showed that *YouTube* (85%), *Instagram* (72%) and *Snapchat* (69%), followed by *Facebook* (51%) are the platforms with the highest usage rate, with 35% of US teens reporting using *Snapchat* more often than all the other major social media platforms (Pew Research Center, 2018b). *YouTube* is the most recognized and the most preferred platform for access for all types of content amongst UK adolescents aged 12-15 years (Ofcom, 2017) and presented with the highest use change for those aged between 3-11 years (Ofcom, 2017). In the UK, *Snapchat* use has doubled the number of adolescent users who view it as their main social media profile (32% in 2017 vs. 16% in 2016; Ofcom, 2017).

Technological affordances and key industry trends inevitably impact usage and functionality. Amongst current trends reported are the re-prioritization of interactions over passive media consumption, the replacement of text messaging by live video chatting and short recorded videos, the augmented reality interactions in live video conversations, and the integration of more real world-settings (i.e., live messenger support and payments; 'Digital in 2018', 2018). The technological landscape inevitably

influences usage, but also ensuing psychological processes. For example, the transient and self-destructive nature of *Snapchat* appears to provide a more congruent communication, but it also creates relational challenges (Vaterlaus, Barnett, Roche, & Young, 2016).

The use of social media has been found to play a critical role in fostering positive youth development and future civic engagement (Lee & Horsley, 2017) and it is used primarily for socializing and leisure, as well as for public life interests (Boyd, 2014). For adolescents, a key developmental task that is related to online usage is identity development (Ragelienė, 2016) facilitated through the interaction of self with others to clarify identity development versus role confusion (Erickson, 1968). SNSs facilitate friendship formation and maintenance and provide social support for the development of behaviours, goals, and attitudes. These are fuelled by modelling and/or social pressure (Borca, Bina, Keller, Gilbert, & Begotti, 2015; Poulin & Chan, 2010). At the same time, adolescents distance themselves from primary attachment figures (Fuligni & Eccles, 1993; Papini, Roggman, & Anderson, 1991). By modelling an identity via a social media profile, adolescents expose themselves to peer review that facilitates identity formation, social reality, and status negotiation (Boyd, 2007; Balakrishnan & Griffiths, 2017). However, adolescents are a vulnerable population when it comes to online use (Kuss & Griffiths, 2011). During early adolescence, the emotional state is characterized by less positivity and more instability (Larson, Moneta, Richards, & Wilson, 2002). Furthermore, self-regulatory processes and emotional control are still developing (Berthelsen, Hayes, White, & Williams, 2017), and internet use is increased (Rideout, Foehr, & Roberts, 2010). However, adolescents lack a fully developed self-regulatory capacity to control its use (Pokhrel et al., 2013). Additionally, there is evidence of susceptibility to self-image perceptions and peer comparisons that may lead to a low self-worth and potentially to the development of eating disorders,

depression, and obesity (Voelker, Reel, & Greenleaf, 2015). Since SNS use constitutes a salient activity in everyday life and with concerns about excessive screen time on a physical and psychosocial level (Asare, 2015; Atkin, Sharp, Corder, & van Sluijs, 2014), and a small minority of adolescents may develop maladaptive behaviours potentially leading to addiction or other disorders (Griffiths, Lopez-Fernandez, Throuvala, Pontes, & Kuss, 2018), it is vital to understand adolescents' key motivations driving SNS usage.

Different motivational factors for social media use have been proposed in the psychological literature (for reviews, see Kuss & Griffiths [2011, 2017]). Recent empirical studies share commonalities in their findings concerning the key motivational factors including entertainment, information-seeking, personal utility, and convenience, with social interactive gratification and mobile convenience exhibiting the highest impact on all other forms (Al-Menayes, 2015). Other motivations include online communication and online-self-disclosure, psychological need satisfaction (Ang, Abu Talib, Tan, Tan, & Yaacob, 2015), need for popularity (Utz, Tanis, & Vermeulen, 2011), social competition in trying to get the most 'likes' (Balakrishnan & Griffiths, 2017), identity formation, enhancing personal values and sense of connectedness, social interaction, and mobile convenience functions (Ha, Kim, Libaque-Saenz, Chang, & Park, 2015). The need for constant availability and validation, perceived enjoyment, social relationship formation, mood regulation, entertainment, and a need to conform with group norms, have been also identified (Chen et al., 2017).

Various theories and models have been proposed to explain adolescent motivations of using SNSs. Two of the most prominent theories are the (i) *Self-Determination Theory* (Deci & Ryan, 2000; Deci & Ryan, 1985), with three main psychological needs (autonomy, relatedness and competence), and (ii) *Uses and*

Gratifications Theory (Blumler & Katz, 1974; Katz, Blumler, & Gurevitch, 1973), where gratifications drive mobile SNS use by emphasizing the hedonic, integrative and mobile dimensions of adolescent motivations. Based on these theories or a combination of them, scholars have proposed various motivational categories for SNS use (Al-Menayes, 2015; Ang et al., 2015; Ha et al., 2015; Kircaburun, Alhabash, Tosuntaş, & Griffiths, 2018; K.-Y. Lin & Lu, 2011). Other theories relating to motivations of SNS use refer to identity development or social identity deficits. The *social enhancement hypothesis* (or ‘rich get richer’) proposes that individuals with larger offline social networks engage in more extensive online network building to strengthen relationships (Kraut et al., 2002). *Social compensation theory* claims that online communication is likely to be used for social compensation and social facilitation in order to offset lack of social skills or difficulties with peer face-to-face interactions and peer disengagement (Valkenburg, Schouten, & Peter, 2005). Personal identity (the personal characteristics that are unique to the individual), social identity (stemming from awareness of membership in a social group along with the value ascribed and the emotional attribution of this membership), and self-esteem building (Tajfel, 1978) have also been proposed to underlie SNS use (Griffiths & Kuss, 2011). Based on the *Sociometer Theory* (Leary & Baumeister, 2000), self-esteem is a function of the relational value and the degree of social acceptance within a social environment. This relational value in SNS use has been confirmed empirically (Valkenburg, Koutamanis, & Vossen, 2017), but is influenced by many other individual factors (e.g., a strong purposeful life, self-esteem, etc.; Burrow & Rainone, 2017).

Various factors mediate the relationship between motivations and SNS use, such as age, gender, and introversion (Valkenburg et al., 2005), high intensity, and bonding social capital (Piwek & Joinson, 2016), as well as different motivational factors for specific features versus general use of social media platforms (Smock,

Ellison, Lampe, & Wohn, 2011). Additionally, external (i.e., the parent-adolescent relationship) and personal antecedents (i.e., deficient self-regulation, habit strength) play an important role in time spent on SNSs and have been found to relate to dependence on SNSs for identity development in adolescents (Lee, Ho, & Lwin, 2017). Therefore, engagement with the online environment is dynamic and evolving, and requires empirical investigation that can shed light on fresh perspectives and insights behind adolescent use.

More recent psychological phenomena emerging from SNS use, such as the ‘fear of missing out’ (FoMO) – the need to be online to avoid feelings of apprehension when one is absent from rewarding experience that others may have (Przybylski, Murayama, DeHaan, & Gladwell, 2013) – has been associated with a reinforcing use of social media and prompting a vicious cycle of engagement (Buglass, Binder, Betts, & Underwood, 2017). Empirical evidence has demonstrated that FoMO and preoccupation with feeling unpopular or isolated leads to higher *Facebook* use and stress responses (Beyens, Frison, & Eggermont, 2016). Similarly ‘nomophobia’ (no mobile phobia) – feelings of anxiety and distress for not being able to communicate and access information, losing connectedness and giving up convenience (Yildirim & Correia, 2015) – is associated with problematic smartphone use and endorses a habitual checking state that is further reinforced by ‘informational rewards’ (Oulasvirta, Rattenbury, Ma, & Raita, 2012).

A growing body of literature provides evidence of stress, anxiety, compulsive and depressive symptomatology associated with excessive social media use (Barry, Sidoti, Briggs, Reiter, & Lindsey, 2017; Griffiths, Kuss, & Demetrovics, 2014; Griffiths et al., 2018; O’Keeffe, Clarke-Pearson, & Council on Communications and Media, 2011; Reid & Weigle, 2014; Royal Society for Public Health, 2017; Weinstein, 2018). Young people present with a paradox. Despite the high use and popularity of

specific social media platforms, young people consider these same platforms as having a high net negative impact in terms of mental health (Royal Society for Public Health, 2017). Nomophobia, FoMO, and habitual checking behaviours are becoming more prevalent and have been associated with anxiety, depression, and problematic smartphone use (Elhai, Levine, Dvorak, & Hall, 2016), raising a need to explore the process that relate social media use and motivations to these mechanisms. Despite these concerns, the process of how these maladaptive psychological states are related to adolescent motivations has been far less explored.

Additionally, adolescent motivations should be regularly evaluated. First, due to the constant evolving nature of SNSs, their perceived value may be shifting (i.e. *Snapchat* and *Instagram* have grown at considerably faster rates than *Facebook* use), reflecting a diverse user experience (Pew Research Center, 2018a). Second, the proliferation of platforms offers a multiplicity of new features and services that promote use and offers additional incentives for user engagement (from online social games, to instant messengers, video chats, news feeds, etc.). Motivations for use may shift, be intensified and/or skewed towards any of these SNS tailored services that may be driven by the need for satisfaction of specific needs (i.e., need for one-to-one or smaller group communication on instant messengers [IMs] rather than public posts or need for achievement in online social games). One such feature is the introduction of streaks on *Snapchat*, which highlights the number of consecutive days in a row that one individual has sent at least one photo to another individual – that appear to account for more frequent and compulsive involvement with the platform (Griffiths, 2018). Third, smartphones facilitate access and the increasing provision of free Wi-Fi services, reinforce frequency of use, and provide further incentives for adolescent online engagement.

Contemporary research examining the underlying motivations of social media

use highlights mainly positive motives. However, the processes of how latent needs and motivations are related to prolonged engagement, higher checking behaviours, FoMO, nomophobia, and potentially more compulsive use, is much less explored. Consequently, the present study attempts to fill this gap in knowledge by identifying motivational factors underlying current usage and attitudes and highlight their associations with anxiety-inducing phenomena experienced by adolescents (i.e., FoMO and nomophobia). The present authors believe that adolescent internal control processes, FoMO and nomophobia do not occur in vacuum but rather underpin adolescents' use and motivations, in addition to social and functional needs. It was therefore, hypothesized that adolescent motivational factors would be underpinned by (i) dysfunctional mechanisms of FoMO, (ii) nomophobia, and (iii) peer pressure for constant presence and interactivity online and (iv) need for checking. This hypothesis is extending research evidence suggesting that FoMO mediates need satisfaction, mood and engagement, which may lead to a cyclical process reinforcing use (Buglass et al., 2017; Przybylski et al., 2013; Wegmann, Oberst, Stodt, & Brand, 2017), and nomophobia, peer pressure and habit-forming checking behaviours potentially involved in higher usage (Guyer, Caouette, Lee, & Ruiz, 2014; Guyer, Choate, Pine, & Nelson, 2012; King et al., 2013; Olivencia-Carrión, Ferri-García, Rueda, Jiménez-Torres, & López-Torrecillas, 2018; Oulasvirta et al., 2012). Findings can help: (i) educators and parents develop their understanding and communication skills with adolescents on digital issues, (ii) public policy to embed research concerning motivations in prevention or intervention initiatives against excessive social media use, and (iii) clinicians who deal with adolescents to gain insight into processes driving adaptive and maladaptive SNS usage in the overall life context of the adolescent.

2. Methods

2.1 Participants

Participants (N = 42) aged 12-16 years (M = 13.5 years, SD = 2.3) were selected in collaboration with three local secondary schools in the East Midlands area of the UK, including a mix of an all-female school and two co-educational schools. Students were primarily white (63%), black (22%) and East Asian (15%), with an almost even gender split (48/52 female/male) and from diverse socio-economic communities: upper socio-economic (20%), middle (54%), and lower (26%). This study targeted adolescents due to the: (i) high online usage this age group exhibits, and the vulnerability to peer evaluations and risk behaviours (Helms et al., 2014), (ii) heightened vulnerability to excessive online use, leading potentially to addictive symptoms (Kuss et al., 2013), and (iii) development of body-image concerns and an overemphasis on peer comparisons that may be associated with the development of eating disorders, obesity and dysfunctional exercise (Meier & Gray, 2014; Voelker et al., 2015).

2.2 Design

A qualitative study was conducted to explore adolescent students' views and attitudes on SNS, reflect on personal experiences, and understand the processes underlying and driving use. The aim of the study was to investigate the uses, motivations, and values that are ascribed to screen time and SNS use among adolescents. Focus groups were the chosen method to provide a breadth of accounts from participants. Accounts of the uses and motivational factors were investigated with qualitative methodology and analysed with the use of thematic analysis (TA; Braun & Clarke, 2006; Clarke & Braun, 2017). TA is a theoretically flexible approach, applying a theoretical framework that guides the authors' analytic choices, and is an "organic approach" (Braun & Clark 2017, p.297) to coding and theme generation that supports the active role of the researcher. Qualitative research allows for the in-depth exploration of the underlying issues and motivations for the occurrence of a behaviour, providing a comprehensive understanding of the deeper experience of individuals (Willig, 2013).

Focus groups were transcribed and analysed using TA (Braun & Clarke, 2006) and the NVivo 11 software for the generation of themes. Analysis comprised six stages (Table 1): (i) familiarization with the data following multiple readings of the transcripts, (ii) generating initial codes via open coding with the extraction and isolation of verbatim quotes, (iii) searching for themes both under the discussion topic and emerging ones based on extracts from the transcripts, (iv) reviewing initial codes and identifying any latent themes and then combining into preliminary themes, (v) refining and developing of themes in subsequent iterations, and (vi) consolidating further the identified themes under fewer themes.

The respective questions and design were informed by previous research on SNS usage and motivations (Al-Menayes, 2015; Barker, 2009; Boyd, 2007; Liu et al., 2016; Przybylski et al., 2013; Valkenburg et al., 2017, 2005). A total of six focus groups, comprising 6-8 students in each group, were conducted in three secondary school settings in the UK. More specifically, the present study assessed the: (i) students' SNS use, and (ii) the main drivers of online engagement with SNSs. The focus groups were semi-structured, lasted approximately 60 minutes in duration, and were audio-recorded. A number was assigned to each participant to maintain confidentiality. Each focus group included open-ended questions based on a semi-structured focus group guide, centred on the experience of social media use in the daily context and within relationships and the primary motives for use. Questions specific to SNSs were used in the present study (e.g., "Which social media apps are you mostly using?", "Why do you think you are using [name of platform mentioned]?", and "What are your peers' reasons for using social media?"). Participants offered descriptive accounts, and with further probing (i.e. "Why is this your least favourite platform?") additional narratives emerged.

2.3 Procedure

The ethics committee of the research team's university approved the framework of the study and the relevant materials (i.e., focus group guide, information sheet, student consent and debrief forms, socio-demographics sheet). A parental opt-out form was sent out by the school administration on behalf of the research team. The study was explained by the primary researcher in an informative email to the schools that was then followed up with face-to-face contacts with the schools' head teachers and the head of pastoral care. Upon agreement for participation, information sheets about the nature of the study were distributed electronically from the school administration to the parental community along with parental opt-out forms in case parents wanted to exclude their child from participation in the study. The location and time of each focus group was arranged by the school administration to accommodate for school priorities. The aforementioned procedure took place in all schools and the focus groups took place across two visits to each school. The sign-up for participation was conducted by the schools' administrators during students' lunchtime and there was no compensation or reward provided for participation. Students were assigned participant numbers and the focus group sessions were audio-recorded. Each focus group was invited to discuss the topic of social media use, the platforms of choice, and the reasons for using each platform and to comment on own experiences as well as that of their peers.

2.4 Data analysis

Codes were initially developed by the first author and another member of the research team. These were then discussed with the remaining members of the research group as coding developed. Braun and Clarke (2018) do not recommend second coding and inter-rater reliability (IRR) to be undertaken in data analysis, because TA assumes a flexible, organic and reflexive approach that should not necessarily be guided by positivist/realist assumptions. However, to ensure rigor and trustworthiness of data (Nowell, Norris, White, & Moules, 2017) and the consistency of the analytical

procedure, inter-rater reliability was conducted to assess the level of agreement (Armstrong, Gosling, Weinman, & Marteau, 1997). The first author and one of the research team members independently engaged in separate analyses to identify themes across transcripts (Miles & Huberman, 1994). A high level of agreement was observed when results were discussed and differences in opinions were resolved through discussion. Different conceptualizations of the subthemes were discussed and justified amongst researchers. Following discussion of the different accounts, they were either merged or excluded from the analysis. Following assessment, there was an 80% agreement between the coders on 93% of the codes.

Themes were identified at both a semantic and a latent level to develop a more in-depth understanding of adolescent usage and key motives suggested (i.e., convenience and connectivity). Therefore, the final formulation of the themes was latent, following a social constructivist epistemological approach to TA (Braun & Clarke, 2006), given research questions related to perceptions of social media use and motives underlying use that refer not only to explicit motives (i.e., communication with peers), but also implicit meanings (i.e., peer comparison and validation) in a socially constructed experience. The coding system made reference to which of the six focus groups the selected quote was from (i.e., 'FG2' means the second focus group), followed by a reference to gender (M=male, F=female) and participant number (i.e., M3). Consequently, the code 'FG5F2' refers to a quote from female participant number two in the fifth focus group.

Table 1
Defining phases of thematic analysis followed

Phases of thematic analysis	Detailed account of processes in phases
Phase 1: Data familiarization	Engage repeatedly with the data, document reflective thoughts and impressions about potential themes

Phase 2: Generating initial codes	Start line-by-line coding, document team meeting debrief, use reflexive diary – note keeping per code,
Phase 3: Searching for themes	Combine codes, render themes, develop hierarchies of concepts and themes, hierarchically structured codebook, keep notes on development of semantic and latent themes
Phase 4: Reviewing themes	Team members examine codebook of themes and sub-themes of both two team members against transcripts, look for recurring patterns and differences
Phase 5: Defining and naming themes	Discuss final discrepancies in theme generation, critical assessment, reach research team consensus
Phase 6: Consolidation of themes/Analysis justification	Describe the process of coding and analysis, report on reasons for methodological and analytical choices, findings illustrated with quotes

3. Results

3.1 Adolescent perceptions for online uses, attitudes and platforms of choice

3.1.1 Social media platforms of choice

Social media use was viewed by adolescents as indispensable for communication with friends and family, a source for information, learning and validation, and a source of inspiration for one's interests. The platforms of choice for participants were *Instagram*, *Snapchat*, and *YouTube*, and the least favourable platform was *Facebook* due to it being perceived (i) as a complex platform in design, offering more complicated features (i.e., uploading of videos), (ii) the platform of choice for adults and older generations, and (iii) filled with adverts and pop-up advertising messages that were viewed as negative and intrusive. *Snapchat* and *Instagram* were considered as complementary platforms with complementary functions and as necessary platforms to engage with. However, all platforms were perceived as gradually converging and losing their distinctiveness by introducing successful competitor features or services within their own platforms (*Facebook* added live stories, which was seen as copying content from *Instagram*; *Instagram* added news features, etc.).

3.1.2 Social media with values and norms

Each platform was perceived as serving a different purpose. *Instagram* was viewed as an idealistic picture-sharing, slice-of-life application that was a source of inspiration for an individual's life activities and interests. The majority of adolescents reported having a second account on *Instagram*, called *Finstagram*, that was a private account, shared only with very close friends and where communications were exchanged in a more intimate fashion. Adolescents held this account to maintain privacy and to relate more closely with their inner circle of friends. The second more private account was preferred and considered to be free from social comparison and scrutiny, with posts that were perceived as fun, relatable, "normal, more of an inner circle thing" (FG2F6) and easier to follow. Similarly, *Snapchat* was the "inner-circle" platform, where more humoristic, self-sarcastic, and fun aspects of everyday life were shared among close friends. *YouTube* was mainly used by adolescents to watch television series and movies, instead of typical television viewing, as well as to search for music videos or other interests.

Negative issues arising from use were with *Instagram* and the negative and aggressive comments posted (i.e., "nasty") or when another family member (usually the mother) were also members on the platform (i.e., on *Facebook*). Other explicit and implicit uses, rules, and attitudes towards specific platforms were raised (i.e., the urgency for *Snapchat* streaks maintenance, how *Snapchat* could become annoying if used too frequently, and content that was politically correct to be posted online and varying according to platform).

3.1.3 Specific social media apps use

Use of social media was reported by adolescents to be serving as a filler between other activities and to counteract boredom or make up for the lack of after-school activities. Use was reported to be more pronounced over weekends or during holidays when the daily program was less structured and where access to friends offline was

limited. SNS platforms filled this void and offered the possibility to connect with friends regardless of geographic location.

Snapchat. Adolescents perceived *Snapchat* as an “inner circle” platform that provided the opportunity to communicate personal matters to each other. By design, *Snapchat* was perceived as encouraging the exchange of more personal information that would otherwise not be easily shared in any other SNS. This sense of privacy facilitated the exchange of private information, like a shared diary with closest friends. It was therefore considered more fun, via the sharing of entertaining messages that participants would not share on other platforms (i.e., *Twitter*), and it was favoured for its simplicity and directness. A crucial finding was that *Snapchat* was viewed as having a more discursive nature where adolescents perceive their actions as “talking” rather than using it. Given the pervasiveness and the popularity of the platform among adolescent populations, on *Snapchat* oral and text communication appeared to be equated and collapsed into a single form of communication. News features were viewed positively because they were perceived as expanding by offering new features, but at the same time were viewed as less reliable and trustworthy.

Instagram. *Instagram* (along with *Snapchat*) was considered the most popular app, involving the sharing of daily life moments, with more visuals, and self-presentation opportunities for content creation and deliberation. Choice and flexibility were seen as given to users, who could tailor the app as to how private or public they wanted their account. Students of private schools preferred to have a private status, whereas the students of state schools had a mixture of both public and private statuses with acquisition of ‘friends of friends’ being considered positively. *Instagram* was viewed as copying content from *Snapchat*. The photo feature was dominant, less so than direct messages (DMs) and videos that were perceived mainly as *Snapchat* features. Captions complemented the message of the photo and were seen as “telling

the story behind” the photo. Selfies were not accompanied by comments, but if it was a group photo, it was typically accompanied by a positive comment for the experience. *Pinterest* – although less frequently mentioned – was used for inspiration (as well as *Instagram*) on topics of artistic interest rather than communication (“...on everything, fashion, bedroom ideas, hair, make-up, and dresses”). Other applications (i.e., *Twitter*, *Vine*) were mentioned as less frequently used.

Finstagram (commonly referred to as ‘*Finsta*’) – a combination of the words ‘fake’ and ‘*Instagram*’ – refers to a second, more private account, that was perceived to be a more entertaining and personal platform relating to more casual, fun, and everyday moments. *Finstas* were reported by adolescents to feature unfiltered photographic material (unlike the edited counterparts that appear on *Instagram*) that represented a platform for sharing more realistic daily adolescent experiences.

3.2 Motivations for SNS use

Six main motivational themes driving adolescent online use emerged from the data analysis: (i) symbiotic relationship with peers online via social media and smartphone attachment, (ii) digital omnipresence related to control and loss of control, (iii) emotion regulation and enhancement, (iv) idealization versus normalization of self and others, (v) peer comparison and ego validation, (vi) functionality-facilitation of communication functions. A summarized outline of the themes with their respective subthemes and verbatim examples is provided in Table 2.

Table 2

The perceived motivations of SNS use in adolescent students: Results from a qualitative study with the use of thematic analysis

Themes and Subthemes	Frequency	Verbatim Examples
Theme 1: Symbiotic relationship with peers online via social media and smartphone attachment		
Peer attachment and enrichment of relationships	15	“...because everything is on social media nowadays, I mean people meet in real life but when you don’t know somebody that’s like the first time you meet them is on social media.” (FG4M3)

Pressure for availability	20	I would prefer to put it aside until I am done with homework, but when you see a notification popping up, you just go on immediately...” (FG1F7)
FoMO	8	When you can't reply, it makes you feel really agitated, get really angry, and you're like 'I need to reply. I have to reply'...” (FG6F3)
Smartphone attachment and nomophobia	15	“I don't take it out of my hand unless I have to.” (FG4M4)
Theme 2: Digital omnipresence related to need for control and loss of control		
Use=confidence and control	10	“People just have this new sense of confidence online where they think they can do whatever they want.” (FG2F2)
‘Always on’ – No geographical limits	20	“I live far away from my friends. I'd speak to them on Snapchat instead of texting...we are across the world from each other, we still can talk.” (FG5F2)
Difficulty to control	20	“I do feel like people spend a lot of time on it. I don't really know how you can stop people just like from doing that, for me it carries on until I get bored.” (FG3M4)
Streak maintenance and checking as habit	17	“I go to check my streaks first thing in the morning so I don't lose them.” (FG3M2)
Phubbing	13	“I need to check or I feel bad” (FG5M3)
Maintaining privacy	12	“I feel it is just like a nice filler, social media...when you can't be bothered to speak to someone...” (FG2F6)
Surveillance	8	“The second account is a more private account.” (FG1F6)
		“...then I would want to know what she was doing there and like investigate, do you know what I mean?” (FG2F1)
Theme 3: Emotion regulation and enhancement		
Counteract boredom	12	“Like when you're bored, you just slip it out your pocket let's be honest.” (FG4F1)
Mood booster	8	“It's just a way to make me feel better.” (FG1F2)
Escapism/Distress	7	“Personally, it's like an escape route and when you've got a lot on your plate, it helps me distress.” (FG3M4)
Enjoyment/Learning	3	“I friend because they have fun stories or jokes or because of history I quite like history, so some teach history.” (FG3M5)
Theme 4: Idealization versus normalization of self and others		
Identity construction/self-presentation	10	“I don't know anything else but to be on my phone. I don't quite know what to do with myself.” (FG6F3)
Impression management	15	“It doesn't matter if everybody looks awful and I look amazing I'm still going to post it.” (FG2F7)
Compensation for perceived deficits or lack of social skills	6	“Especially with filters and make up they can be sort of hiding things like mental illness, presenting a better self to show people that they're fine.” (FG5F5)
Realistic perspective taking	6	“At social media displaying a perfect body being very skinny, you still get that, you get more obscure models, and especially with models there's a lot of influence with normal models, what you see at social media, you don't really see in magazines.” (FG2F4)
Plurality in representation and inclusion	5	“...whereas on social media it's just everyone who is deciding what they wanna post and it's better you're not forced to say it is ok to be the skinny model, if you wanna look like a plus size model, companies are trying to use the internet, minority models, there is more representation on social media, but there is a real image you need to appeal to.” (FG2F5)
Drawing Inspiration	12	“...and for like Instagram and Pinterest, inspiration and stuff... everything, fashion, bedroom ideas, hair, makeup, dresses.” (FG6F3)
Theme 5: Peer comparison and ego validation		
Peer influence	6	“...or like trends, so like if nobody in the first place hadn't got the idea that Snapchat was a cool thing to use, then nobody else would have started using it.” (FG4F3)
Peer comparison/Judgement passing	5	“Even when you're with your friends you're like 'oh look what she posted'...” (FG1F5)
Fear of being judged/avoiding value judgment	10	“I get scared that someone will post a really ugly photo of me, I feel that people are so judgmental.” (FG2F5)
Need for validation and popularity	15	(On Finsta) “That is way preferred, free from social comparison and scrutiny, where the posts are considered as fun, relatable, normal, more of an inner circle thing, better to follow.” (FG2F6)
expectations for collective positive peer feedback	10	“I expect nice comments, people to like it. ... (selfies) just taking and putting it online for popularity.” (FG2F3)
Sharing/self-disclosure & discovery of common interests	20	“Snapchat a lot more, because it gets more personal, you can talk to your friends and say something more personal, private...” (FG2F4), “You can see their interests...” (FG4M5)
Theme 6: Functionality - facilitation of communication functions		
Ease/convenience/variety/appeal/ mobility prolongs access	30	“It's easier and more appealing to be on social media; it's more usable, less effort, and available, you're reading a book but then you just can change that, there's variety in social media” (FG1F8)

Facilitation of interpersonal communication	30	“When you have been talking to someone online for quite a while and then you meet them, then it is less awkward.” (FG3M3)
Filler for lack of activities	20	“If somebody doesn’t have anything after school, they get bored and they go on it.” (FG3M2)
Research and explore	16	“To research and to find things out, like you can just Google anything, rather than having to go through to find stuff...you can also watch strong tutorials analyzing sensor weathering something you wouldn’t be able to see; it is like a window to the world.” (FG2M2)
Saves time	20	“Comparatively to talk to someone you can text them and they would reply whereas if you would go and meet them, it would take half an hour.” (FG3M7)
Facilitates homework	18	“Personally when I’m on the Internet it makes the textbook almost irrelevant..it is easier to go on social media when you’re on the Internet doing homework for school it’s easy to sidetrack but it’s definitely useful with your work.” (FG5M5)
Multitasking	25	“It is not just the phone, it the fact that you can be in something and continue with something else” (FG3M4)
Appealing innovation of platforms’ services	10	“Snapchat, Instagram, they’re making it better every week...stories of professional gamers, so bit of news, stuff you wouldn’t be reading in a magazine, so that’s quite cool, that’s a benefit of it. Snapchat, it is quite good because it’s broadening; it’s interesting, it’s adding new stuff.” (FG4M4)

Theme 1: Symbiotic relationship with peers online via social media and smartphone attachment. One major theme arising from the analysis on motivations driving SNS use was the symbiotic relationship with peers that was facilitated by the engagement with social media and smartphones that provided instant access to peer interaction. Three sub-themes were identified: (i) peer attachment and enrichment of relationships with friends supported by the constant online peer presence, (ii) pressure for constant availability and FoMO, and (iii) smartphone attachment and nomophobia.

1.1 Peer attachment and enrichment of relationships with friends, supported by the constant online peer presence. Constant communication online (the ‘always on’ culture; Kuss & Griffiths, 2017) with current friends and making new friends was perceived as a key driver of adolescent use of SNSs. Contact with current friends was initiated, maintained, and nurtured via social media, and the first point of contact and impressions about new friends came from their online presence. Therefore, social media profiles served as a source of an individual’s biography, offering information about the adolescent’s life and activities. A preference for online communication as a first point of contact was expressed rather than for face-to-face contact, as it was experienced by adolescents to be a more secure way of interaction. Therefore, new contact initiation was viewed as facilitated when conducted initially online. Meeting

new friends was accomplished by befriending 'friends of friends', which was not perceived by adolescents as a threat, as long as there was no financial or sexual solicitation involved. However, meeting online first and then offline was often accompanied with experiences of disappointment due to the discrepancy between online and offline appearance because the offline image was often not found to match up the online, due to the use of filters and other enhancement mechanisms. Therefore, the expectations regarding appearance formed prior to meeting was met with disappointment that led to an expressed overall preference for online contact.

1.2 Pressure for constant availability and FoMO. Online presence was accompanied by expectations for constant availability by peers which was experienced by adolescents as a form of pressure when unable to do so. The peer pressure experienced to be constantly checking online messages and notifications was also reported as frustrating and causing distress, but ultimately as a source of temptation that they were unable to control, which consequently caused disruption, especially when doing homework: When messages were not reciprocated, the senders perceived this as a sign of being ignored. Similarly, FoMO drove adolescent social media use and was experienced by adolescents who reported feelings of anxiety when (i) they were missing out on opportunities to spend time with friends, (ii) there was a need for awareness of what their friends were doing, and/or (iii) there was a need to follow friends' activities. FoMO was amplified by peer pressure for constant availability and via nomophobia that was associated with smartphone attachment, because adolescents experienced anxiety if their smartphone was not within their immediate reach. However, when discussing FoMO, few adolescents were critical of this emotional response, because they perceived it as exaggerated and lacking realistic grounds due to their experiences suggesting that nothing important was ultimately missed. However, they expressed an apparent compulsion to check their social media accounts and an obsessive

preoccupation (“*I need to check, or I feel bad*”, FG5M3). Others expressed practical considerations if they were unable to have access, such as missing out on opportunities for last minute arranged outings with peers.

1.3 Smartphone attachment and nomophobia. Smartphones were viewed as significant others and there was a strong attachment developed and a reported interest and investment in the devices. This was expressed from facilitating online access to peers to providing identity, was imbued with powerful capabilities that were transferred to the adolescent. However, this attachment was often perceived as being at the expense of offline social interaction. When access to a mobile was not possible, this was followed by a negative mood and behaviour towards others.

Theme 2: Digital omnipresence related to need for control and loss of control. This theme comprised the following sub-themes: (i) use grants confidence and control, (ii) ‘always on’ - no geographic boundaries, (iii) difficulty to control, (iv) streak maintenance and checking as habit, (v) phubbing, (vi) maintaining privacy, and (vii) surveillance.

2.1 Use grants confidence and control. Online use was perceived as providing additional confidence to the adolescent and a feeling of omnipotence that related to a sense of control. This confidence was facilitated by various affordances (i.e., likes, followers) and the use of communication enhancement features (i.e., airbrush, emojis), which empowered adolescents to control impressions, relationships, content and self-expression in order to maintain this positive emotion, however, this was perceived as an act to control popularity.

2.2 ‘Always on’, no geographic boundaries & difficulty to control. For adolescents there was a need for being constantly online, interacting with friends and relatives, maintaining online contact by offsetting geographic boundaries, thus exhibiting control over their social interactions. At the same time, adolescents reported difficulty in

resisting the pressure for constant online presence and unsuccessful efforts to set limits in online communications.

2.3 Streak maintenance and checking as a compulsive habit. Adolescents reported the urge to maintain their streaks, which was given first priority in their daily schedules and was reported as being a compulsive habit of high importance to the individual (urgency, prioritized, and performed every day). This need appeared to be facilitated by ease of accessibility and habit formation that maintained a vicious cycle of need for constant use.

2.4 Phubbing. Behaviours like phubbing – snubbing another person by concentrating on one’s device while in the presence of that individual (Karadağ et al., 2015) – were reported and viewed as a way to exercise control in unwanted social interactions. Adolescents considered phubbing as an impolite and uncivil behaviour. However, it was legitimized as behaviour when in the presence of undesirable peers.

2.5 Maintaining privacy and surveillance. Maintaining a second, private account to share with close friends satisfied their needs for privacy and ease of self-expression. Online presence was driven also by a need to be aware of what peers are doing at any given moment, which guided their own actions.

Theme 3: Emotional regulation and enhancement. Social media platforms were perceived to facilitate regulation and enhancement of emotions. Three sub-themes were identified: (i) counteracting boredom, (ii) mood boosting and escapism to relieve distress, and (iii) enriching entertainment and learning.

3.1 Counteracting boredom. Turning to social media use was seen as an automatic response to overcome boredom or lack of other activities. This was made possible through mechanisms of passive exposure to content and via more active methods, such as self-disclosure, encouraging reciprocity, or self-affirmation through content creation.

3.2 Mood boosting and escapism to relieve distress. SNS use was expressed by

adolescents as enhancing their emotional state. Additionally, it was perceived as an outlet when under pressure that aided the adolescent in escaping from distress and negative emotionality.

3.3 Enriching entertainment and learning. Adolescents reported that both entertainment and learning from online content and each other was perceived as a driver of SNS involvement and was seen as a positive emotional experience of enrichment.

Theme 4: Idealization versus normalization of self and others. This theme comprised the following sub-themes: (i) idealized identity construction for self-presentation, impression management, and compensation for perceived deficits or lack of social skills, (ii) realistic perspective-taking, plurality in representation, and inclusion, and (iii) drawing inspiration.

4.1 Idealized identity construction for self-presentation, impression management, and compensation for perceived deficits. Adolescents appeared to engage in social media use because these platforms offered many opportunities for idealized identity construction and/or to make up for other perceived inefficiencies. Selfie-taking was the consequent behaviour for such self-promotion. Adolescents reported investing time and energy in constructing and presenting an enhanced version of their self, via meticulous manipulation of selfies (with the use of filters, airbrushes, etc.) and/or selective uploading of photographic material. Consequently, self-presentation on SNSs was a major part of identity construction that was facilitated by SNS tools and was reflected in the choice of images uploaded, satisfying the standards of beauty or competence for peer acceptance. Adolescents discussed this tendency to portray a less accurate image online in favour of a more idealized identity profile online. This was deliberate and viewed as necessary because the profile was visible to closer friends, but also simultaneously to more distant affiliations. In the case of one female adolescent, social media was viewed as providing her with an identity: *“I don't know anything else but to*

be on my phone. I don't quite know what to do with myself." (FG6F3). Compensation for perceived deficits (i.e., having a mental illness or lack of social skills) was another driver for social media engagement.

4.2 Realistic perspective-taking, plurality in representation, and inclusion. Adolescents perceived that representation on social media was more normalized, inclusive, and representative of general population characteristics of colour, race, ethnicity, and standards of beauty than those appearing in traditional media. This inclusive representation was viewed in a positive way and was suggested as further reinforcement for the choice of digital versus traditional media. Need for normalization was also expressed via the use of the second accounts, the *'Finstagrams'*, where self-representation was casual and ordinary contrary to the ideal images depicted on *'Instagram'*.

4.3 Drawing inspiration. SNSs, primarily *Instagram* and *Pinterest*, were perceived as the platforms that adolescents found inspirational because of being presented with ideas on various topics from home décor to personal grooming that they could then utilize in their own daily lives.

Theme 5: Peer comparison and ego validation. Social comparison and validation was suggested as a key motivation of social media use for adolescents. This theme comprised the following sub-themes: (i) peer/social comparison, peer influence, and inevitable value judgement, (ii) fear of being judged and need to avoid value judgement (iii) need for validation, popularity and expectations for collective positive peer feedback, and (iv) sharing, self-disclosure, and discovery of common interests.

5.1 Peer/social comparison, peer influence and inevitable value judgement. Adolescents engaged in social comparison on various levels (i.e., appearance and performance) and was considered an innate human need. Peer comparison was viewed as an inevitable process taking place on SNSs. This comparison led to the need to

promote the most favourable personal photos, disregarding others' appearance on the photos. Judgement and criticism towards others were perceived as inevitable and were accompanied with fear of how they are perceived themselves by others.

5.2 Need for validation, popularity, and expectations for collective positive peer feedback. The act of content enhancement was underlined by a need for popularity that fuelled expectations for endorsement and validation through the generation and accumulation of 'likes', 'comments', 'followers' and/or a high number of 'friends'. The higher the number of likes and collective peer feedback, the higher the perceived acceptability was considered to be.

5.3 Sharing, self-disclosure, and discovery of common interests. Sharing and self-disclosure were endemic in adolescent communication via specific social media channels that were considered more appropriate for private communication and free from peer scrutiny. Through the process of sharing and disclosing, common interests were identified that served as additional incentive for SNS use.

Theme 6: Functionality – facilitation of communication functions. This theme comprised seven sub-themes: (i) facilitating everyday communication, ease, convenience, variety and appeal, (ii) social facilitation of interpersonal communication (iii) being a filler for lack of activities, (iv) research and exploration, (v) saving time and facilitating homework, (vi) multitasking, and (vii) appealing innovation of platforms. Adolescents reported communicating via SNSs for various functional reasons and to complement offline communication (e.g., to make plans to meet with friends offline or talk online, to share news with friends that live further away, to find information and promote learning through exploration and research). Additionally, they reported social media could be used to assist with homework assignments and to be informed about schoolwork they had missed. Adolescents spoke of schoolteachers' expectations to catch up on schoolwork via contact with friends. Moreover, the ability

to multitask was viewed as saving time. Furthermore, novel services offered by social media platforms were considered an additional benefit to users, in spite of their questionable quality.

4. Discussion

The present qualitative study explored adolescents' personal views and attitudes towards uses and key motivational factors for social media use and identified control processes related to motivations for SNS use in adolescence. Adolescents reported that SNS use formed a dominant part of their lives, offering both positive and negative affect experiences from use, and confirming previous findings (Weinstein, 2018). SNS use is part of a new youth culture with shared beliefs, rules, and meaning that is distinct from adult interaction (Vaterlaus et al., 2016). Consistent with previous research (Tulane, 2012), adolescents talked about uses, rules, and attitudes towards specific platforms. Findings suggested that SNSs were perceived as offering distinct functions and features, but also to be converging with the adoption of successful competitor services. The diversity of platforms appeared to serve a different functional use of entertainment and communication between the adolescents serving a larger public or private network of friends, or the smaller group of friends closer to the adolescent.

Social media use therefore appeared to be influenced by the context and affordances of SNSs and motives via the dynamic interaction with peers online. *Instagram* and *Snapchat* were found to complement each other and were used in tandem by adolescents. *Instagram* was perceived to offer an enhanced 'slice of everyday life' to be shared either in a public or in private status. Adolescents perceived *Snapchat* as an "inner circle" platform to share more personal, entertaining personal stories, confirming prior research demonstrating that *Snapchat* is primarily used for communication with close friends and family as an 'easier and funnier' alternative to

other instant messaging services (Piwek & Joinson, 2016). *Facebook* was the least preferred SNS by adolescents for reasons of complexity of design as well as being viewed as the platform of choice for ‘older generations’, reflecting the migration to other platforms (*Snapchat, Instagram*) observed in usage rates.

Apart from uses, the present study mainly explored motivations for SNS use that have been found to be critical in the pursuit of goal-oriented behaviour and to facilitate or inhibit psycho-emotional development (Council on Communications and Media, 2016), partially determining effects on identity, intimacy, and sexuality (Valkenburg & Peter, 2011). The key themes identified – related to smartphone and peer attachment, need to control identity portrayal, content and relationships, use for emotion regulation and need to define self and social reality (others) on an idealization versus normalization spectrum – offered an in-depth account beyond motivational factors proposed in the current literature. These findings highlighted control mechanisms, namely the need to control and exert peer influence on content, relationships, self-presentation, and impressions. The need to exert control represents a human psychological and biological necessity (Leotti, Iyengar, & Ochsner, 2010) that may be more relevant to adolescents since they are particularly sensitive to the reward-sensitizing effects of social stimuli that further undermine their capacity to withhold impulsive responding (Albert, Chein, & Steinberg, 2013). This motive of control in the context of social media was found to be reinforced by FoMO, smartphone attachment, and nomophobia, which fuelled the need for constant presence. Furthermore, digital omnipresence to control led to prolonged engagement and perceived loss of control over use.

These findings may be explained by Perceptual Control Theory (PCT; Powers, 1973). According to PCT, all behaviours are driven by individuals’ need to control their perceptual experience. Behaviour is therefore organized around the control of

individuals' own perceptions and the reduction of the discrepancy that potentially arises. Discrepancy occurs when two competing goals are conflicting or may be mutually exclusive. This causes conflict that leads to distress and the behaviour is then continually re-adjusted to reduce that discrepancy. According to this model, which acts on perception, comparison and action providing a feedback loop, it could be hypothesized that adolescents are motivated to behave on social media in a way that is consistent with their perceptions and through peer comparison leads their actions and constantly re-organizes their behaviour to reduce distress. High urgency and intensity of need for control may drive specific maladaptive SNS-related behaviours, such as compulsive checking, a cause of clinical and developmental concern (Barry et al., 2017), or FoMO, and may lead to problematic use of SNSs and potentially to SNS addiction. Additional motives for connectedness, validation, self-expression, enhancement and utility to facilitate communication functions were also identified, confirming previous findings (Al-Menayes, 2015; Barker, 2009; Beyens et al., 2016; Boyd, 2007; Burrow & Rainone, 2017; Chotpitayasunondh & Douglas, 2016; Helms et al., 2014; Kwak, Choi, & Lee, 2014; Mascheroni, Vincent, & Jimenez, 2015; Przybylski et al., 2013; Toma & Hancock, 2013; Utz et al., 2011).

Justification for the first motivational theme, i.e., symbiotic relationship with peers online via social media and smartphone attachment, may be found in psychodynamic perspectives and more recent scholarly work. During adolescence, there is a primary need for personal expression, feedback, and validation from peers, similar to the one expressed towards primary attachment figures (Choi & Toma, 2014). It has been hypothesized that this need has been amplified due to the erosion of the family function, which has been displaced by identification models increasingly met in the digital realm (Ermann, 2004). Adolescents experience smartphones as part of the self, connected to the devices in a unique personalized way as an object that offers a

connection between the self and the world (Konok, Gigler, Bereczky, & Miklósi, 2016; Konok, Pogány, & Miklósi, 2017). These objects are emotionally invested with qualities of omnipotence and become “a reassuring extension of motivations, personality and inner psychological life” (Suler, 2016, p. 135). Object attachment has been regarded by previous scholars as a mechanism for anxiety reduction (Litt, 1986) and recent evidence has supported this (the ‘adult pacifier hypothesis’; Melumad, 2017). Therefore, smartphone use, which is intertwined with SNS use, arguably nourishes this symbiotic relationship with peers and the object-device.

Digital omnipresence in order to exercise and maintain control of the online environment and relationships and the potential loss of control over this formed the second motivational theme. The symbiotic relationship and attachment to the online community was expressed as the need to be constantly online (omnipresence) and was reinforced by peer expectations for constant access and availability. The need to belong and fear of ostracism have been identified as key motivators for online behaviour and have been positively associated with perceived expectations and obligation for immediate online reciprocity (Mai, Freudenthaler, Schneider, & Vorderer, 2015). IMs have been found to enhance connection in existing relationships (Vaterlaus et al., 2016). However, FoMO has been found to mediate the relationship between increased SNS use and decreased self-esteem, potentially reinforcing a detrimental vicious cycle of use, leading to feelings of inadequacy (Buglass et al., 2017). FoMO was expressed in the present study as a driver of SNS engagement and could be interpreted as an expression of the peer attachment dynamic, reflecting potentially the fear of disruption of this attachment. In a recent study on *Facebook* use, FoMO was found to make the single largest contribution to SNS addiction (Pontes, Taylor, & Stavropoulos, 2018) and can therefore be considered to be a maladaptive mechanism leading to increased unconscious motivation for SNS engagement.

The third theme was emotional enhancement and mood modification. Adolescents reported using SNS to change or enhance their emotional state. This finding has received prior empirical support (Myrick, 2015; Utz et al., 2011) and appears in the literature, as achieved by asking for help (Zaki & Williams, 2013) or social sharing of emotion (Hidalgo, Tan, & Verlegh, 2015; Rimé, 2009), posting socially positive emotions or personally relevant emotions (Bazarova, Choi, Schwanda Sosik, Cosley, & Whitlock, 2015) or curation of a personal profile that can boost perceptions of self-worth (Toma & Hancock, 2013). Overcoming or avoiding boredom has been suggested as another motivation for SNS use (Ryan, Chester, Reece, & Xenos, 2014; Waheed, Anjum, Rehman, & Khawaja, 2017). Boredom is associated with purposeless browsing and loss of time, and boredom proneness is a risk factor in the development of internet addiction (Chou, Chang, & Yen, 2018; Lin, Lin, & Wu, 2009) and internet communication disorder (Wegmann, Ostendorf, & Brand, 2018). However, recent evidence suggests that boredom also has positive functions and may aid creative thinking and redefine life goals and purposeful behaviour (Bench & Lench, 2013; Caldwell, Darling, Payne, & Bowdy, 1999; Mann, 2017; Throuvala, Griffiths, Rennoldson, & Kuss, 2018a; Tilburg & Igou, 2017).

The fourth theme reflecting motivational factors for SNS use was the need to define and critically evaluate behaviours (of others versus the self) along the continuum of idealization to normalization. First, the need for popularity expressed by adolescents has received empirical support as the strongest and most consistent motivational factor (Utz et al., 2011). A powerful need to present an ideal image online via SNSs along with need for its validation was expressed by adolescents in the present study. Simultaneously, there is increasingly an expressed need for more normalization and authentic, realistic and entertaining self-expression amongst the closer circle of friends on platforms such as *Snapchat* and the creation of '*Finstagram*'. Evidence suggests that

SNS use allows for self-presentation and peer comparison to occur (Mascheroni et al., 2015) and these influences interact and co-construct ideal standards of beauty, which have a critical role in self-perception, self-esteem, and identity development (Boyd, 2007; Meier & Gray, 2014).

The fifth theme – need for peer comparison and ego validation – is in accordance with the developmental goals of adolescence to achieve identity formation, and SNSs provide the opportunities for adolescents to do so via self-presentation that is subject to peer judgment (Walther et al., 2011) while adolescents strive for a balance between ideal and real representation (Chua & Chang, 2016). Previous research has identified a gap between teenage girls' self-beliefs and perceived peer standards of beauty, with low self-esteem and insecurity driving edited self-presentation and pursuit of peer recognition (Chua & Chang, 2016). Positive self-presentation is therefore a need to be realized that has been associated with feelings of anxiety about peer evaluation (Guyer et al., 2014, 2012). Peer positive appraisal leads to positive self-evaluation – a psychic condition termed as ‘extimacy’ (Tisseron, 2016). A study that examined the number of ‘likes’ individuals received on their *Facebook* profile pictures was positively associated with self-esteem, but influence was moderated by a greater sense of purpose (Burrow & Rainone, 2017). Finally, the sixth theme of functionality highlighted the utility aspect of social media use and has received prior empirical support (Al-Menayes, 2015).

Furthermore, evidence suggest that specific structural characteristics (e.g., *Snapchat* streaks) and key features of SNSs (i.e., live videos, the placement of filters for the enhancement of photos prior to posting) reinforce the motives for use (Griffiths, 2018). Specific behaviours (constant checking), if not performed, resulted in anxiety and negative emotionality. These behaviours involve the performance of habitual or ritualistic actions that amplify engagement. The present study identified a control

motive as driving adolescent social media that may be reinforced by FoMO, nomophobia and powerful emergent structural characteristics of SNS. Similarly to games, where the acquisition of artefacts or rewards reinforce the gamer into prolonging the gaming experience (Griffiths & Nuyens, 2017; King, Herd, & Delfabbro, 2018), SNSs exhibit a plethora of structural features that engage adolescents further in habitual behaviours (Griffiths, 2018; Turel & Osatuyi, 2018). SNS intensity and network size have been found as significant predictors of mobile SNS applications which are associated with smartphone addiction (Salehan & Negahban, 2013). These features potentially shift users from a connecting experience that adds value, to one with emphasis on the quantity of interaction (i.e., number of streaks, number of likes on selfie-postings, etc.). Urgency and intensity of habit and need to control content can define these as adaptive or maladaptive processes (i.e., the need for belonging versus FoMO). FoMO has been suggested as one of the predictors of smartphone addiction and smartphone addiction to phubbing (Chotpitayasunondh & Douglas, 2016; Kuss & Griffiths, 2017). Together with peer pressure, these tendencies may lead to compulsive or addictive behaviours that are a cause of clinical or developmental concern (Balakrishnan & Griffiths, 2017; Barry et al., 2017; Bij de Vaate, Veldhuis, Alleva, Konijn, & van Hugten, 2018; Stead & Bibby, 2017).

Finally, the present study also found a perceived merging of oral and text/instant messenger (IM) communication on SNSs. Adolescents' oral communication was found to be equivalent with text communication in the minds of adolescents. Availability and access to SNSs via smartphones have facilitated the passage from traditional verbal and face-to-face communication methods to text-based IM communication. This finding partially reflects the simultaneous use of diverse live communication features (i.e., text, photo, video, stories, emojis, filters etc.) and is in line with previous research that purports that IMs complement more traditional forms of communication for

relationship maintenance in everyday communication (Ramirez & Broneck, 2009). Although there is evidence that SNS and IMs reinforce communication, intensified by the use of smartphones (Kwak et al., 2014) as well as enhancing life satisfaction (Dienlin, Masur, & Trepte, 2017), this perceived merging of oral and text communication has neurophysiological and potential psycho-emotional and communication implications that are in need of further investigation (Colgin, 2013; Gindrat, Chytiris, Balerna, Rouiller, & Ghosh, 2015; Tatum, DiCiaccio, Kipta, Yelvington, & Stein, 2016).

4.1 Limitations of the present study

The small purposive sample was appropriate for this exploratory study, but findings in terms of generalizability should be replicated with larger and more diverse adolescent samples and by using different methods to collect data concerning these themes in future research. Focus groups were the primary source of data collection and are sensitive to biases of group setting, such as focusing more on a selective topic of discussion, which may influence the group decision-making. Second, the sample was homogeneous in terms of ethnic background (UK adolescents). Third, the recruitment strategy itself involved the voluntary choice of students by the school administrators that could potentially include students who do not face any problems with their online use or the deliberate choice of students who may be experiencing problems with internet use as a way to encourage the respective students to discuss their experiences. Additionally, generalization of findings should be viewed with caution in terms of their temporal validity, given the rapid changes in technological advancement and developments in the provision of social media services, which may direct motivational factors to other aspects or forms of social media engagement, potentially altering usage behaviours (i.e., preference for short live video features versus text chats).

4.2 Implications and recommendations

This line of research can aid the design of interventions that address parental mediation strategies and the understanding of the adolescent perspective in forming effective communication approaches towards moderate use. Motivations research may contribute to prevention efforts of maladaptive tendencies that may lead to psycho-emotional problems by focusing on targeting compulsive tendencies before they escalate and reach a level of clinical significance. By re-evaluating the role of motivations, intervention strategies may then incorporate activities that address these motivations for peer attachment dynamics, identity formation, and self-presentation, providing alternative channels of self-worth. These findings may also be utilized in schools and community settings, as well as help inform public policy and clinical practice to target screen overuse (Altenburg, Kist-van Holthe, & Chinapaw, 2016), and smartphone and social media addiction (Kuss & Griffiths, 2017; Throuvala, Griffiths, Rennoldson, & Kuss, 2018b). Individual and peer processes (i.e., deficient self-regulation, and strong habitual use) or mediating variables (i.e., peers' time spent on SNSs) may influence adolescent motives and dependence on SNS use and are in need of further investigation (Chua & Chang, 2016; Lee & Cheung, 2014; Thadani, 2011).

Future research should further examine the role of control in the acquisition, development, maintenance, and recurrence of problematic smartphone and SNS use. Additionally, research should examine the context in relation to motivation, gender differences, and platform-specific and feature-specific motivations and preferences (i.e., Instant Messenger for relational maintenance and sustaining involvement) (Marino, Mazzieri, Caselli, Vieno, & Spada, 2018; Ramirez & Broneck, 2009). Exploring mediating factors, such as the role of educators, parents, and peers (Ragelienė, 2016), may facilitate a greater understanding and address with specificity maladaptive behaviours in prevention and treatment.

5. Conclusion

Adolescence is a developmental period of increased emotional and cognitive changes with key developmental tasks being served by the engagement with social media. Motivations are key in understanding major drivers to adolescent SNS use which is increasingly forming a major component of adolescent screen time. Their study should be regularly updated given the evolving adolescent communication needs and trends developed by the technological affordances of new social media products and services that encourage new uses.

The present study addressed participants' current uses and perceptions of motives that underpin SNS preferences and identified potentially dysfunctional mechanisms that reinforce motives for online engagement in SNSs. Key motivations for social media use were social, psychological, and functional and were based on six motivational themes, reflecting constant interactivity and a symbiotic relationship with peers via smartphones, the need for control of content and relationships and to construct social reality along the idealization-normalization continuum. To our knowledge, the motives of peer symbiotic relationship, smartphone attachment, use for emotion regulation and spectrum of idealization versus normalization have not been yet identified as motivational factors in the literature. Additional motives that emerged were their use for emotion regulation, enhancement, peer comparison, ego validation, and for utility. Adolescents equated texting with talking on specific social networking sites, a finding that needs to be further investigated along with its implications. Control motives amplify use of platform features (i.e., *Snapchat* streaks) and the occurrence of anxiety-inducing mechanisms (i.e., FoMO), which potentially reinforce compulsive patterns of social media use.

Addressing motivational drivers and perceptions of use offers the adolescent perspective and a window of opportunity to use these insights in interventions for

dysfunctional smartphone use, suicide prevention, or eating disorders (Meier & Gray, 2014). Additionally, it may provide an understanding of the dynamics of the eager embracement of the social media environment and its psychological risks in adolescence.

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

ACCEPTED MANUSCRIPT

References

- Albert, D., Chein, J., & Steinberg, L. (2013). The teenage brain: Peer influences on adolescent decision making. *Current Directions in Psychological Science*, 22(2), 114–120. <https://doi.org/10.1177/0963721412471347>
- Al-Menayes, J. J. (2015). Motivations for using social media: An exploratory factor analysis. *International Journal of Psychological Studies*, 7(1), 43–50. <https://doi.org/10.5539/ijps.v7n1p43>
- Altenburg, T. M., Kist-van Holthe, J., & Chinapaw, M. J. M. (2016). Effectiveness of intervention strategies exclusively targeting reductions in children's sedentary time: a systematic review of the literature. *International Journal of Behavioral Nutrition and Physical Activity*, 13:65. <https://doi.org/10.1186/s12966-016-0387-5>
- Ang, C.-S., Abu Talib, M., Tan, K.-A., Tan, J.-P., & Yaacob, S. N. (2015). Understanding computer-mediated communication attributes and life satisfaction from the perspectives of uses and gratifications and self-determination. *Computers in Human Behavior*, 49, 20–29. <https://doi.org/10.1016/j.chb.2015.02.037>
- Armstrong, D., Gosling, A., Weinman, J., & Marteau, T. (1997). The place for inter-rater reliability in qualitative research: An empirical study. *Sociology*, 31(3), 597–606.
- Asare, M. (2015). Sedentary behaviour and mental health in children and adolescents: A meta-analysis. *Journal of Child and Adolescent Behavior*, 3, 259. <https://doi.org/10.4172/2375-4494.1000259>
- Atkin, A. J., Sharp, S. J., Corder, K., & van Sluijs, E. M. F. (2014). Prevalence and correlates of screen time in youth: an international perspective. *American*

Journal of Preventive Medicine, 47(6), 803–807.

<https://doi.org/10.1016/j.amepre.2014.07.043>

Balakrishnan, J., & Griffiths, M. D. (2017). An exploratory study of “selfitis” and the development of the Selfitis Behavior Scale. *International Journal of Mental Health and Addiction*, 16(3), 722–736. <https://doi.org/10.1007/s11469-017-9844-x>

Barker, V. (2009). Older adolescents’ motivations for social network site use: The influence of gender, group identity, and collective self-esteem.

CyberPsychology & Behavior, 12(2), 209–213.

<https://doi.org/10.1089/cpb.2008.0228>

Barry, C. T., Sidoti, C. L., Briggs, S. M., Reiter, S. R., & Lindsey, R. A. (2017).

Adolescent social media use and mental health from adolescent and parent perspectives. *Journal of Adolescence*, 61, 1–11.

<https://doi.org/10.1016/j.adolescence.2017.08.005>

Bazarova, N. N., Choi, Y. H., Schwanda Sosik, V., Cosley, D., & Whitlock, J. (2015).

Social sharing of emotions on Facebook: Channel differences, satisfaction, and replies. In *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing* (pp. 154–164). New York, NY, USA: ACM.

<https://doi.org/10.1145/2675133.2675297>

Bench, S. W., & Lench, H. C. (2013). On the function of boredom. *Behavioral Sciences*, 3(3), 459–472.

<https://doi.org/10.3390/bs3030459>

Berthelsen, D., Hayes, N., White, S. L. J., & Williams, K. E. (2017). Executive

function in adolescence: Associations with child and family risk factors and self-regulation in early childhood. *Frontiers in Psychology*, 8:903.

<https://doi.org/10.3389/fpsyg.2017.00903>

- Beyens, I., Frison, E., & Eggermont, S. (2016). "I don't want to miss a thing": Adolescents' fear of missing out and its relationship to adolescents' social needs, Facebook use, and Facebook related stress. *Computers in Human Behavior*, *64*, 1–8. <https://doi.org/10.1016/j.chb.2016.05.083>
- Bij de Vaate, A. J. D., Veldhuis, J., Alleva, J. M., Konijn, E. A., & van Hugten, C. H. M. (2018). Show your best self(ie): An exploratory study on selfie-related motivations and behavior in emerging adulthood. *Telematics and Informatics*. <https://doi.org/10.1016/j.tele.2018.03.010>
- Blumler, J. G., & Katz, E. (1974). *The uses of mass communications: Current perspectives on gratifications research*. (Vol. 3). London: Sage Publications, Inc.
- Bobkowski, P. S., Shafer, A., & Ortiz, R. R. (2016). Sexual intensity of adolescents' online self-presentations: Joint contribution of identity, media consumption, and extraversion. *Computers in Human Behavior*, *58*, 64–74. <https://doi.org/10.1016/j.chb.2015.12.009>
- Borca, G., Bina, M., Keller, P. S., Gilbert, L. R., & Begotti, T. (2015). Internet use and developmental tasks: Adolescents' point of view. *Computers in Human Behavior*, *52*, 49–58. <https://doi.org/10.1016/j.chb.2015.05.029>
- Boyd, D. (2007). Why youth (Heart) social network sites: The role of networked publics in teenage social life. In D. Buckingham (Ed.), *MacArthur Foundation Series on Digital Learning – Youth, Identity, and Digital Media Volume*. Cambridge, MA: MIT Press.
- Boyd, D. (2014). *It's complicated: the social lives of networked teens*. Yale, CT, USA: Yale University Press.

- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
<https://doi.org/10.1191/1478088706qp063oa>
- Braun, V., & Clarke, V. (2018). Questions about thematic analysis [The University of Auckland]. Retrieved from <https://www.psych.auckland.ac.nz/en/about/our-research/research-groups/thematic-analysis/frequently-asked-questions-8.html#c83c77d6d1c625135085e489bd66e765>
- Buglass, S. L., Binder, J. F., Betts, L. R., & Underwood, J. D. M. (2017). Motivators of online vulnerability: The impact of social network site use and FOMO. *Computers in Human Behavior*, 66, 248–255.
<https://doi.org/10.1016/j.chb.2016.09.055>
- Burrow, A. L., & Rainone, N. (2017). How many likes did I get?: Purpose moderates links between positive social media feedback and self-esteem. *Journal of Experimental Social Psychology*, 69, 232–236.
<https://doi.org/10.1016/j.jesp.2016.09.005>
- Caldwell, L., Darling, N., Payne, L., & Bowdy, B. (1999). ‘Why are you bored?’ An examination of psychological and social control causes of boredom among adolescents. *Journal of Leisure Research*, 31(2), 103–121.
- Chen, C., Zhang, K. Z. K., Gong, X., Zhao, S. J., Lee, M. K. O., & Liang, L. (2017). Examining the effects of motives and gender differences on smartphone addiction. *Computers in Human Behavior*.
<https://doi.org/10.1016/j.chb.2017.07.002>
- Choi, M., & Toma, C. L. (2014). Social sharing through interpersonal media. *Computers in Human Behavior*, 36(C), 530–541.
<https://doi.org/10.1016/j.chb.2014.04.026>

- Chotpitayasunondh, V., & Douglas, K. M. (2016). How “phubbing” becomes the norm: The antecedents and consequences of snubbing via smartphone. *Computers in Human Behavior*, *63*, 9–18.
<https://doi.org/10.1016/j.chb.2016.05.018>
- Chou, W.-J., Chang, Y.-P., & Yen, C.-F. (2018). Boredom proneness and its correlation with Internet addiction and Internet activities in adolescents with attention-deficit/hyperactivity disorder. *Kaohsiung Journal of Medical Sciences in Press*. <https://doi.org/10.1016/j.kjms.2018.01.016>
- Chua, T. H. H., & Chang, L. (2016). Follow me and like my beautiful selfies: Singapore teenage girls’ engagement in self-presentation and peer comparison on social media. *Computers in Human Behavior*, *55*, 190–197.
<https://doi.org/10.1016/j.chb.2015.09.011>
- Clarke, V., & Braun, V. (2017). Thematic analysis. *The Journal of Positive Psychology*, *12*(3), 297–298. <https://doi.org/10.1080/17439760.2016.1262613>
- Colgin, L. L. (2013). Mechanisms and functions of Theta rhythms. *Annual Review of Neuroscience*, *36*(1), 295–312. <https://doi.org/10.1146/annurev-neuro-062012-170330>
- Council on Communications and Media. (2016). Media use in school-aged children and adolescents. *Pediatrics*, *138*(5). <https://doi.org/10.1542/peds.2016-2592>
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. London: Plenum.
- Deci, E. L., & Ryan, R. M. (2000). The " what" and " why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227–268.
- Dienlin, T., Masur, P. K., & Trepte, S. (2017). Reinforcement or displacement? The Reciprocity of FtF, IM, and SNS communication and their effects on

- loneliness and life satisfaction. *Journal of Computer-Mediated Communication*, 22(2), 71–87. <https://doi.org/10.1111/jcc4.12183>
- Digital in 2018: World's internet users pass the 4 billion mark. (2018, January 30). Retrieved 2 July 2018, from <https://wearesocial.com/blog/2018/01/global-digital-report-2018>
- Elhai, J. D., Levine, J. C., Dvorak, R. D., & Hall, B. J. (2016). Fear of missing out, need for touch, anxiety and depression are related to problematic smartphone use. *Computers in Human Behavior*, 63, 509–516. <https://doi.org/10.1016/j.chb.2016.05.079>
- Erikson, E. H. (1968). *Identity, youth and crisis*. New York: W.W. Norton & Company Inc.
- Ermann, M. (2004). On medial identity. *International Forum of Psychoanalysis*, 13(4), 275–283. <https://doi.org/10.1080/08037060410004737>
- Fulgini, A. J., & Eccles, J. S. (1993). Perceived parent-child relationships and early adolescents' orientation toward peers. *Developmental Psychology*, 29(4), 622–632. <https://doi.org/10.1037/0012-1649.29.4.622>
- Giannakos, M. N., Chorianopoulos, K., Giotopoulos, K., & Vlamos, P. (2013). Using Facebook out of habit. *Behaviour & Information Technology*, 32(6), 594–602. <https://doi.org/10.1080/0144929X.2012.659218>
- Gindrat, A.-D., Chytiris, M., Balerna, M., Rouiller, E. M., & Ghosh, A. (2015). Use-dependent cortical processing from fingertips in touchscreen phone users. *Current Biology*, 25(1), 109–116. <https://doi.org/10.1016/j.cub.2014.11.026>
- Griffiths, M. D. (2018). Adolescent social networking: How do social media operators facilitate habitual use? *Education and Health*, 36(3), 66–69.

- Griffiths, M. D., & Kuss, D. J. (2011). Adolescent social networking: should parents and teachers be worried? *Education and Health, 29*(2), 23–25. Retrieved from <http://irep.ntu.ac.uk/id/eprint/3950/>
- Griffiths, M. D., Kuss, D. J., & Demetrovics, Z. (2014). Social networking addiction: An overview of preliminary findings. In *Behavioral Addictions* (pp. 119–141). Elsevier. Retrieved from <http://dx.doi.org/10.1016/B978-0-12-407724-9.00006-9>
- Griffiths, M. D., Lopez-Fernandez, O., Throuvala, M. A., Pontes, H., & Kuss, D. J. (2018). Excessive and problematic use of social media in adolescence: A brief overview. Report submitted to the UK Parliament Science and Technology Committee (Impact of social media and screen-use on young people's health inquiry). <https://doi.org/10.13140/RG.2.2.11280.71682>
- Griffiths, M. D., & Nuyens, F. (2017). An overview of structural characteristics in problematic videogame playing. *Current Addiction Reports, 4*, 272–283. <https://doi.org/10.1007/s40429-017-0162-y>
- Guyer, A. E., Caouette, J. D., Lee, C. C., & Ruiz, S. K. (2014). Will they like me? Adolescents' emotional responses to peer evaluation. *International Journal of Behavioral Development, 38*(2), 155–163. <https://doi.org/10.1177/0165025413515627>
- Guyer, A. E., Choate, V. R., Pine, D. S., & Nelson, E. E. (2012). Neural circuitry underlying affective response to peer feedback in adolescence. *Social Cognitive and Affective Neuroscience, 7*(1), 81–92. <https://doi.org/10.1093/scan/nsr043>
- Ha, Y. W., Kim, J., Libaque-Saenz, C. F., Chang, Y., & Park, M.-C. (2015). Use and gratifications of mobile SNSs: Facebook and KakaoTalk in Korea. *Telematics and Informatics, 32*(3), 425–438. <https://doi.org/10.1016/j.tele.2014.10.006>

- Helms, S. W., Choukas-Bradley, S., Widman, L., Giletta, M., Cohen, G. L., & Prinstein, M. J. (2014). Adolescents misperceive and are influenced by high-status peers' health risk, deviant, and adaptive behavior. *Developmental Psychology, 50*(12), 2697–2714. <https://doi.org/10.1037/a0038178>
- Hidalgo, C. T. R., Tan, E. S., & Verlegh, P. W. J. (2015). The social sharing of emotion (SSE) in online social networks: a case study in live Journal. *Computers in Human Behavior, 52*(Nov), 364–372. <https://doi.org/10.1016/j.chb.2015.05.009>
- Karadağ, E., Tosuntaş, Ş. B., Erzen, E., Duru, P., Bostan, N., Şahin, B. M., ... Babadağ, B. (2015). Determinants of phubbing, which is the sum of many virtual addictions: a structural equation model. *Journal of Behavioral Addictions, 4*(2), 60–74. <https://doi.org/10.1556/2006.4.2015.005>
- Katz, E., Blumler, J. G., & Gurevitch, M. (1973). Uses and gratifications research. *Public Opinion Quarterly, 37*(4), 509–523. <https://doi.org/10.1086/268109>
- King, A. L. S., Valença, A. M., Silva, A. C. O., Baczynski, T., Carvalho, M. R., & Nardi, A. E. (2013). Nomophobia: Dependency on virtual environments or social phobia? *Computers in Human Behavior, 29*(1), 140–144. <https://doi.org/10.1016/j.chb.2012.07.025>
- King, D. L., Herd, M. C. E., & Delfabbro, P. H. (2018). Motivational components of tolerance in Internet gaming disorder. *Computers in Human Behavior, 78*, 133–141. <https://doi.org/10.1016/j.chb.2017.09.023>
- Kircaburun, K., Alhabash, S., Tosuntaş, Ş. B., & Griffiths, M. D. (2018). 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. Epub Ahead of Print.* <https://doi.org/10.1007/s11469-018-9940-6>
- Konok, V., Gigler, D., Bereczky, B. M., & Miklósi, Á. (2016). Humans' attachment to their mobile phones and its relationship with interpersonal attachment style. *Computers in Human Behavior, 61*, 537–547. <https://doi.org/10.1016/j.chb.2016.03.062>
- Konok, V., Pogány, Á., & Miklósi, Á. (2017). Mobile attachment: Separation from the mobile phone induces physiological and behavioural stress and attentional bias to separation-related stimuli. *Computers in Human Behavior, 71*, 228–239. <https://doi.org/10.1016/j.chb.2017.02.002>
- Kraut, R., Kiesler, S., Boneva, B., Cummings, J., Helgeson, V., & Crawford, A. (2002). Internet paradox revisited. *Journal of Social Issues, 58*(1), 49–74. <https://doi.org/10.1111/1540-4560.00248>
- Kuss, D. J., & Griffiths, M. D. (2011). Online social networking and addiction—A review of the psychological literature. *International Journal of Environmental Research and Public Health, 8*(12), 3528–3552. <https://doi.org/10.3390/ijerph8093528>
- 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), 311. <https://doi.org/10.3390/ijerph14030311>
- Kuss, D. J., Griffiths, M. D., & Binder, J. F. (2013). Internet addiction in students: Prevalence and risk factors. *Computers in Human Behavior, 29*(3), 959–966. <https://doi.org/10.1016/j.chb.2012.12.024>
- Kwak, K. T., Choi, S. K., & Lee, B. G. (2014). SNS flow, SNS self-disclosure and post hoc interpersonal relations change: Focused on Korean Facebook user.

Computers in Human Behavior, 31, 294–304.

<https://doi.org/10.1016/j.chb.2013.10.046>

- Larson, R. W., Moneta, G., Richards, M. H., & Wilson, S. (2002). Continuity, stability, and change in daily emotional experience across adolescence. *Child Development*, 73(4), 1151–1165.
- Leary, M. R., & Baumeister, R. F. (2000). The nature and function of self-esteem: Sociometer theory. In *Advances in Experimental Social Psychology* (Vol. 32, pp. 1–62). San Diego, CA: Academic Press. [https://doi.org/10.1016/S0065-2601\(00\)80003-9](https://doi.org/10.1016/S0065-2601(00)80003-9)
- Lee, A. L., & Horsley, S. (2017). The role of social media on positive youth development: An analysis of 4-H Facebook page and 4-H'ers' positive development. *Children and Youth Services Review*, 77, 127–138. <https://doi.org/10.1016/j.chilyouth.2017.04.014>
- Lee, E. W. J., Ho, S. S., & Lwin, M. O. (2017). Extending the social cognitive model—Examining the external and personal antecedents of social network sites use among Singaporean adolescents. *Computers in Human Behavior*, 67, 240–251. <https://doi.org/10.1016/j.chb.2016.10.030>
- Lee, Z. W., & Cheung, C. M. (2014). Problematic use of social networking sites: The role of self-esteem. *International Journal of Business and Information*, 9(2), 143–159.
- Leotti, L. A., Iyengar, S. S., & Ochsner, K. N. (2010). Born to choose: the origins and value of the need for control. *Trends in Cognitive Sciences*, 14(10), 457–463. <https://doi.org/10.1016/j.tics.2010.08.001>
- Lin, C.-H., Lin, S.-L., & Wu, C.-P. (2009). The effects of parental monitoring and leisure boredom on adolescents' Internet addiction. *Adolescence*, 44(176), 993–1004.

- Lin, K.-Y., & Lu, H.-P. (2011). Why people use social networking sites: An empirical study integrating network externalities and motivation theory. *Computers in Human Behavior*, 27(3), 1152–1161.
<https://doi.org/10.1016/j.chb.2010.12.009>
- Litt, C. J. (1986). Theories of transitional object attachment: An overview. *International Journal of Behavioural Development*, 9, 383–399.
- Liu, Y., Liu, R.-D., Ding, Y., Wang, J., Zhen, R., & Xu, L. (2016). How online basic psychological need satisfaction influences self-disclosure online among Chinese Adolescents: Moderated mediation effect of exhibitionism and narcissism. *Frontiers in Psychology*, 7.
<https://doi.org/10.3389/fpsyg.2016.01279>
- Mai, L. M., Freudenthaler, R., Schneider, F. M., & Vorderer, P. (2015). “I know you’ve seen it!” Individual and social factors for users’ chatting behavior on Facebook. *Computers in Human Behavior*, 49, 296–302.
<https://doi.org/10.1016/j.chb.2015.01.074>
- Mann, S. (2017). *The science of boredom: Why boredom is good*. London: Hachette UK.
- Marino, C., Mazzieri, E., Caselli, G., Vieno, A., & Spada, M. M. (2018). Motives to use Facebook and problematic Facebook use in adolescents. *Journal of Behavioral Addictions*, 7(2), 276–283. <https://doi.org/10.1556/2006.7.2018.32>
- Mascheroni, G., Vincent, J., & Jimenez, E. (2015). “Girls are addicted to likes so they post semi-naked selfies”: Peer mediation, normativity and the construction of identity online. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 9(1). Retrieved from
<https://cyberpsychology.eu/article/view/4329>

- Meier, E. P., & Gray, J. (2014). Facebook photo activity associated with body image disturbance in adolescent girls. *Cyberpsychology, Behavior and Social Networking*, *17*(4), 199–206. <https://doi.org/10.1089/cyber.2013.0305>
- Melumad, S. (2017). *The Distinct Psychology of Smartphone Usage*. Columbia University.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. London, UK: Sage Publications.
- Myrick, J. G. (2015). Emotion regulation, procrastination, and watching cat videos online: Who watches Internet cats, why, and to what effect? *Computers in Human Behavior*, *52*, 168–176. <https://doi.org/10.1016/j.chb.2015.06.001>
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic Analysis: Striving to Meet the Trustworthiness Criteria. *International Journal of Qualitative Methods*, *16*(1), 160940691773384. <https://doi.org/10.1177/1609406917733847>
- Ofcom. (2017). *Communications market report*. London: Office of Communications. Retrieved from <https://www.ofcom.org.uk/research-and-data/multi-sector-research/cmr/cmr-2017>
- O’Keeffe, G. S., Clarke-Pearson, K., & Council on Communications and Media. (2011). The impact of social media on children, adolescents, and families. *PEDIATRICS*, *127*(4), 800–804. <https://doi.org/10.1542/peds.2011-0054>
- Olivencia-Carrión, M. A., Ferri-García, R., Rueda, M. del M., Jiménez-Torres, M. G., & López-Torrecillas, F. (2018). Temperament and characteristics related to nomophobia. *Psychiatry Research*, *266*, 5–10. <https://doi.org/10.1016/j.psychres.2018.04.056>

- Oulasvirta, A., Rattenbury, T., Ma, L., & Raita, E. (2012). Habits make smartphone use more pervasive. *Personal and Ubiquitous Computing*, *16*(1), 105–114. <https://doi.org/10.1007/s00779-011-0412-2>
- Papini, D. R., Roggman, L. A., & Anderson, J. (1991). Early-adolescent perceptions of attachment to mother and father: A test of the emotional-distancing and buffering hypotheses. *The Journal of Early Adolescence*, *11*(2), 258–275. <https://doi.org/10.1177/0272431691112006>
- Pew Research Center. (2018a). *Social media use in 2018*. Washington D.C.: Pew Research Center.
- Pew Research Center. (2018b). *Teens, social media & technology 2018*. Washington D.C: Pew Research Center.
- Piwek, L., & Joinson, A. (2016). “What do they Snapchat about?” Patterns of use in time-limited instant messaging service. *Computers in Human Behavior*, *54*, 358–367. <https://doi.org/10.1016/j.chb.2015.08.026>
- Pokhrel, P., Herzog, T. A., Black, D. S., Zaman, A., Riggs, N. R., & Sussman, S. (2013). Adolescent neurocognitive development, self-regulation, and school-based drug use prevention. *Prevention Science*, *14*(3), 218–228. <https://doi.org/10.1007/s11121-012-0345-7>
- Pontes, H. M., Taylor, M., & Stavropoulos, V. (2018). Beyond “Facebook addiction”: The role of cognitive-related factors and psychiatric distress in social networking site addiction. *Cyberpsychology, Behavior, and Social Networking*, *21*(4), 240–247. <https://doi.org/10.1089/cyber.2017.0609>
- Poulin, F., & Chan, A. (2010). Friendship stability and change in childhood and adolescence. *Developmental Review*, *30*(3), 257–272. <https://doi.org/10.1016/j.dr.2009.01.001>
- Powers, W. T. (1973). *Behavior. The control of perception*. New York: Hawthorne.

- Przybylski, A. K., Murayama, K., DeHaan, C. R., & Gladwell, V. (2013). Motivational, emotional, and behavioral correlates of fear of missing out. *Computers in Human Behavior*, 29(4), 1841–1848. <https://doi.org/10.1016/j.chb.2013.02.014>
- Ragelienė, T. (2016). Links of adolescents identity development and relationship with peers: A systematic literature review. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, 25(2), 97–105. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4879949/>
- Ramirez, J., & Broneck, K. (2009). `IM me`: Instant messaging as relational maintenance and everyday communication: *Journal of Social and Personal Relationships*, 26(2–3), 291–314. <https://doi.org/10.1177/0265407509106719>
- Reid, D., & Weigle, P. (2014). Social media use among adolescents: Benefits and risks. *Adolescent Psychiatry*, 4(2), 73–80. <https://doi.org/10.2174/221067660402140709115810>
- Rideout, V. J., Foehr, U. G., & Roberts, D. F. (2010). *Generation M [superscript 2]: Media in the lives of 8-to 18-year-olds*. Menlo Park, California: Henry J. Kaiser Family Foundation. Retrieved from <http://eric.ed.gov/?id=ED527859>
- Rimé, B. (2009). Emotion elicits the social sharing of emotion: Theory and empirical review. *Emotion Review*, 1(1), 60–85. <https://doi.org/10.1177/1754073908097189>
- Royal Society for Public Health. (2017). *StatusOfMind: Social media and young people's mental health and wellbeing*. UK: Royal Society for Public Health. Retrieved from <https://www.rsph.org.uk/our-work/campaigns/status-of-mind.html>

- 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(3), 133–148. <https://doi.org/10.1556/JBA.3.2014.016>
- Salehan, M., & Negahban, A. (2013). Social networking on smartphones: When mobile phones become addictive. *Computers in Human Behavior*, 29(6), 2632–2639. <https://doi.org/10.1016/j.chb.2013.07.003>
- Smock, A. D., Ellison, N. B., Lampe, C., & Wohn, D. Y. (2011). Facebook as a toolkit: A uses and gratification approach to unbundling feature use. *Computers in Human Behavior*, 27(6), 2322–2329. <https://doi.org/10.1016/j.chb.2011.07.011>
- Stead, H., & Bibby, P. A. (2017). Personality, fear of missing out and problematic internet use and their relationship to subjective well-being. *Computers in Human Behavior*, 76, 534–540. <https://doi.org/10.1016/j.chb.2017.08.016>
- Suler, J. R. (2016). *Psychology of the digital age. Humans become electric*. Cambridge: Cambridge University Press.
- Tajfel, H. (Ed.). (1978). *Differentiation between social groups*. London: Academic Press.
- Tatum, W. O., DiCiaccio, B., Kipta, J. A., Yelvington, K. H., & Stein, M. A. (2016). The texting rhythm: A novel EEG waveform using smartphones. *Journal of Clinical Neurophysiology: Official Publication of the American Electroencephalographic Society*, 33(4), 359–366. <https://doi.org/10.1097/WNP.0000000000000250>
- Thadani, D. (2011). The role of deficient self-regulation in Facebook habit formation. In *Information Systems, E-learning, and Knowledge Management Research* (pp. 618–629). Berlin: Springer. https://doi.org/10.1007/978-3-642-35879-1_78

- Throuvala, M. A., Griffiths, M. D., Rennoldson, M., & Kuss, D. J. (2018a). Adolescent motivations for online use: The case of boredom. Presented at the Social Sciences Conference, Nottingham Trent University.
- Throuvala, M. A., Griffiths, M. D., Rennoldson, M., & Kuss, D. J. (2018b). School-based prevention for adolescent internet addiction: Prevention is the key. A systematic literature review. *Current Neuropharmacology*, *16*.
<https://doi.org/10.2174/1570159X16666180813153806>
- Tilburg, W. A. P. van, & Igou, E. R. (2017). Can boredom help? Increased prosocial intentions in response to boredom. *Self and Identity*, *16*(1), 82–96.
<https://doi.org/10.1080/15298868.2016.1218925>
- Tisseron, S. (2016). Intimité et extimité sur le Net. *Connexions*, *105*(1), 39–48.
Retrieved from <https://www.cairn.info/revue-connexions-2016-1-page-39.htm>
- Toma, C. L., & Hancock, J. T. (2013). Self-affirmation underlies Facebook use. *Personality & Social Psychology Bulletin*, *39*(3), 321–331.
<https://doi.org/10.1177/0146167212474694>
- Tulane, S. S. (2012). *Social implications of adolescent text messaging* (Doctoral Dissertation). Utah State University, Utah, USA. Retrieved from <https://digitalcommons.usu.edu/etd/4619>
- Turel, O., & Osatuyi, B. (2018). Tug of war between social self-regulation and habit: Explaining the experience of momentary social media addiction symptoms. *Computers in Human Behavior*. <https://doi.org/10.1016/j.chb.2018.03.037>
- Twenge, J. M., Martin, G. N., & Campbell, W. K. (2018). Decreases in psychological well-being among American adolescents after 2012 and links to screen time during the rise of smartphone technology. *Emotion. Advance Online Publication*. <http://dx.doi.org/10.1037/emo0000403>

- Utz, S., Tanis, M., & Vermeulen, I. (2011). It is all about being popular: The effects of need for popularity on social network site use. *Cyberpsychology, Behavior, and Social Networking*, *15*(1), 37–42. <https://doi.org/10.1089/cyber.2010.0651>
- Valkenburg, P. M., Koutamanis, M., & Vossen, H. G. M. (2017). The concurrent and longitudinal relationships between adolescents' use of social network sites and their social self-esteem. *Computers in Human Behavior*, *76*, 35–41. <https://doi.org/10.1016/j.chb.2017.07.008>
- Valkenburg, P. M., & Peter, J. (2011). Online communication among adolescents: An integrated model of its attraction, opportunities, and risks. *Journal of Adolescent Health*, *48*(2), 121–127. <https://doi.org/10.1016/j.jadohealth.2010.08.020>
- Valkenburg, P. M., Schouten, A. P., & Peter, J. (2005). Adolescents' identity experiments on the internet. *New Media & Society*, *7*(3), 383–402. <https://doi.org/10.1177/1461444805052282>
- Vaterlaus, J. M., Barnett, K., Roche, C., & Young, J. A. (2016). “Snapchat is more personal”: An exploratory study on Snapchat behaviors and young adult interpersonal relationships. *Computers in Human Behavior*, *62*, 594–601. <https://doi.org/10.1016/j.chb.2016.04.029>
- Voelker, D. K., Reel, J. J., & Greenleaf, C. (2015). Weight status and body image perceptions in adolescents: current perspectives. *Adolescent Health, Medicine and Therapeutics*, *6*, 149–158. <https://doi.org/10.2147/AHMT.S68344>
- Waheed, H., Anjum, M., Rehman, M., & Khawaja, A. (2017). Investigation of user behavior on social networking sites. *PLOS ONE*, *12*(2), e0169693. <https://doi.org/10.1371/journal.pone.0169693>
- Walther, J. B., Liang, Y. J., DeAndrea, D. C., Tong, S. T., Carr, C. T., Spottswood, E. L., & Amichai-Hamburger, Y. (2011). The effect of feedback on identity shift

in computer-mediated communication. *Media Psychology*, 14(1), 1–26.

<https://doi.org/10.1080/15213269.2010.547832>

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>

Wegmann, E., Ostendorf, S., & Brand, M. (2018). Is it beneficial to use Internet-communication for escaping from boredom? Boredom proneness interacts with cue-induced craving and avoidance expectancies in explaining symptoms of Internet-communication disorder. *PLoS ONE*, 13(4), e0195742.

<https://doi.org/10.1371/journal.pone.0195742>

Weinstein, E. (2018). The social media see-saw: Positive and negative influences on adolescents' affective well-being. *New Media & Society*, 146144481875563.

<https://doi.org/10.1177/1461444818755634>

Willig, C. (2013). *Introducing qualitative research in psychology* (Third ed.).

Berkshire, UK: Open University Press-McGraw-Hill House.

Yildirim, C., & Correia, A.-P. (2015). Exploring the dimensions of nomophobia:

Development and validation of a self-reported questionnaire. *Computers in*

Human Behavior, 49, 130–137. <https://doi.org/10.1016/j.chb.2015.02.059>

Zaki, J., & Williams, W. C. (2013). Interpersonal emotion regulation. *Emotion*, 13(5),

803–810. <https://doi.org/10.1037/a0033839>