Exploring the Mental Health of Individuals who Play Fantasy Football

Abstract

Fantasy football ("soccer" in North America, Australasia, and certain other countries) is a rapidly growing online game with over seven million individuals playing the Official Premier League version alone. Whilst there is an abundance of anecdotal evidence associating the game with mental health concerns, to date there has been no empirical research conducted in this field. This study aimed to address this by having fantasy football players (N = 1,995) complete questionnaires measuring low mood, anxiety, functional impairment, and problematic behaviour in relation to playing the game. Descriptive statistics revealed that only a minority of players experienced mental health concerns towards fantasy football, however, it was also found that individuals who engaged most in fantasy football (i.e., high time spent playing, researching, and thinking about the game) had significantly worse mental health scores towards the game than those who engaged less. Interestingly, experience in fantasy football showed the opposite effect. It may be that players of fantasy football establish coping mechanisms over time or develop an emotional numbness to the game. Future research should explore this, as well as investigate other factors (such as in-game success, social media use, and perceived locus of control) that may impact the feelings of low mood, anxiety, functional impairment, and problematic behaviour that can exist when playing fantasy football.

Key words: Mental Health, Fantasy Football, Low mood, Anxiety, Online gaming

Introduction

Fantasy sports are online games where an individual is able to create their own virtual team of players to earn points and compete against other individuals. Points are earned (or lost) depending on the chosen players' performances in the 'real world'. For instance, in fantasy football (FF) ("soccer" in North America, Australasia, and certain other countries), the selection of a player who scores a goal or gets an assist will be rewarded with a pre-determined amount of points, whereas the selection of a player who gets a red card or scores an own-goal may be punished with the loss of a set amount of points. In general, the aim is to score the most points, though there are numerous versions of FF which differ based on the real-world league that they are based on (such as the English Premier League or America's Major League Soccer, etc.), the format for in-game success (e.g., head-to-head matches, cumulative points scoring over the course of a season, etc.), the scoring system used (e.g., X points for a goal, etc.), and many other features.

The fantasy sports market is a rapidly growing one. It is projected to increase by $9.34 billion between 2020 and 2024 (Technavio, 2020), whilst the downloading of fantasy gaming apps worldwide is predicted to hit 258 billion in 2022; up from 178 billion in 2017 (Greenberg, 2020). FF has been reported to be the number one fantasy sport globally, with dozens of versions of the game played across hundreds of countries (Research and Markets, 2020). The official 'Fantasy Premier League' game dedicated only to the highest league in English football was played by over seven million people during the 2020-21 season (Fantasy Premier League, n.d.). Not surprisingly, the potential prizes offered by some FF games has also increased (though it should be noted that many versions can be played for free), and one such site recently reported a total of £1.74 million in prizes available (Fanteam, n.d.). Moreover, there exists 'daily fantasy sports' contests which regularly pay-out prizes of tens

of thousands of pounds based on performance over a much shorter period, such as a given day or week (DraftKings, n.d.). Given the rising popularity and importance of the game, it would seem prudent for research to be conducted that explores various psychological and sociological factors associated with FF. In similar domains such as video gaming, gambling, and internet use, there is an abundance of literature examining everything from motivations for participation (Hamari & Keronen, 2017) to risks of self-harm (Marchant et al., 2017), yet in FF, very little published, peer-reviewed work exists. The current study aims to address this by taking an exploratory look at the relationship between fantasy football engagement and various measures of mental health; specifically, low mood, anxiety, functional impairment, and problematic behaviour.

One of the few studies that has been carried out within the FF domain is that by Columb, Griffiths, and O'Gara (2020). The authors' main aim was to identify the prevalence of internet addiction within FF players, and the characteristics of such individuals. 684 participants completed a questionnaire, with the results revealing that 17.5% of individuals met the diagnostic criteria for internet addiction; a number that is "on the higher end of expected internet addiction" (p. 8). Interestingly, data on gambling was also obtained, with 50.6% of participants reporting to have gambled on FF in the previous 12 months. Given the well-founded relationship between both internet addiction and mental health (Kuss et al., 2013) and gambling and mental health (Nower et al., 2018), this study points towards a possible similar association with FF.

Such an idea is also consistent with anecdotal evidence linking FF and mental health issues (Kahn, 2016). There is an abundance of references to the mental health issues of FF players on social media – some possibly flippant (e.g., Aatish, 2019), others seemingly not so (e.g., Kamaran, 2021) – and one only needs to scroll briefly amongst comments to posts from

the Official Fantasy Premier League Twitter account to see the potential damaging effect that exists (OfficialFPL, 2021). Indeed, such is the everyday nature of these comments that one of the leading FF websites in the world – FantasyFootballScout.com – have dedicated articles and podcast episodes to discussing mental health in the game (Fantasy Football Scout, 2020; March, 2019; Watts, 2021). Whilst no empirical evidence currently exists to validate these concerns, work by Dhurup and Dlodlo (2013) hints at the link between FF and wellbeing. The focus of their paper was the motivations behind participation, but in identifying factors such as eustress, external rewards, and enjoyment as important reasons for playing, it lends evidence to the idea that wellbeing may be affected (both positively and negatively) when playing FF. Research into other fantasy sports is marginally more abundant, though again, these have tended to focus on other psychological-based factors, rather than mental health and wellbeing (e.g., social-psychological reactions to external outcomes, Dwyer et al., 2016; motivations for participation, Brown et al., 2012; and personality types, Lee et al., 2011).

A similar area in which there has been considerable research, though, is that of video game playing. Studies have found significant associations between video gaming and anxiety, depression, and life satisfaction (Andreassen et al., 2016; Mentzoni et al., 2011), though it should be noted that in both cases, findings were related to individuals classified as having video game *addiction*. This may be important, as numerous research has argued the case that video games can have a positive influence on well-being when played more moderately (Halbrook et al., 2019; Jones et al., 2014), and studies have demonstrated as such with findings for decreased depression (Durkin & Barber, 2002), increased positive affect (Wang et al., 2008), and reduced stress (Wack & Tantleff-Dunn, 2009). Indeed, such are the potential benefits of playing video games for an individual's mental health that it has become a type of alternative treatment promoted by some therapists, and considerable research exists

exploring the effectiveness of video gaming to help regulate mental and emotional wellbeing (Villani et al., 2018). A recent systematic review by Pine et al. (2020) concluded that casual video gaming is a promising approach with regard to improving anxiety, mood, stress, and depressive symptoms.

It is important to note, however, that there are unique characteristics of FF that may lead to contrasting findings to that of the video game literature. First, compared to traditional video gaming, the FF player has much less control over the outcome of events, and therefore their success. A lack of control has been identified as a risk factor in mental health (Yu et al., 2018) and therefore the potential benefits of gaming may be reduced in FF. Second, whilst the inherent social aspect of FF (you play against other humans as opposed to a computer) may be a positive, it lacks the cooperative element that some researchers have suggested is key to fostering the beneficial effects found in video gaming (Halbrook et al., 2019). Third, many video games are played within deliberately designed environments/modes that generate an incrementally challenging experience, and then to reward the user for success (relieving stress) or penalise the user for failure (exacerbate stress). In FF, however, the difficulty of the game itself never changes and therefore the subsequent experience of success and failure may be harder for the individual to pinpoint. This uncertainty may, again, negatively impact the mental wellbeing of players.

These three characteristics suggest how FF may differ to research that has found *positive* benefits of gaming, but there is also another characteristic of FF that may lead it to contrast with the studies that have reported *negative* effects of gaming. For instance, the "in-real-time" game play mode of FF presents an obstacle to binge-gaming. That is, the fact that FF is based on real-world events – and therefore cannot be consumed at the will of the player as with traditional video gaming – may reduce the prevalence of excessive and addictive

play, factors which are known to have a harmful effect on wellbeing. Finally, it should also be recognised that the nature of FF makes it more closely tied to gambling than most traditional video gaming. Columb et al. (2020) reported that 50.6% of FF participants had gambled on FF in the previous year and therefore, given the large body of evidence connecting online gambling with mental health concerns (see Scholes-Balog & Hemphill, 2012, for a review), FF may be at risk of the same.

Aims of the Present Study

With the present study being (to the authors' knowledge) the first to investigate the mental health of individuals who play FF, an exploratory approach will be taken. That is, the present study first aims to utilize descriptive statistics to provide a picture of the topic in question. With regards to mental health, measures of low mood, anxiety, functional impairment, and problematic behaviour will be gathered. With regards to FF, the study will examine experience (how many years the individual has played the game) and four measures of engagement, specifically: number of leagues played in, and amount of time spent playing the game, researching around the game, and thinking about the game. The relationship between these FF experience/behaviour measures, and mental health measures will be investigated with a Pearson's correlation analysis. Finally, differences in mental health measures between individuals of varying FF experience/behaviour will be examined using one-way ANOVAs. It is important to clarify that the study will explore the extent to which the FF game generates concerning mental health experiences (e.g., low mood, anxiety, functional impairment, and problematic behaviour), as opposed to whether FF is related more holistically to the mental health of players in everyday life. Based on the existing video gaming literature which suggests positive benefits except in excessive/addictive instances of game play (e.g., Jones et al., 2014), the following hypotheses are made:

1. Significant positive correlations will be found between the five FF experience/behaviour measures (FF Experience, FF Leagues, FF Time Playing, FF Time Researching, and FF Time Thinking) and the four mental health measures (low mood, anxiety, functional impairment, and problematic behaviour). Specifically, it is expected that as engagement in the game increases, mental health scores will also increase (reflecting poorer mental health).
2. Individuals who have greater engagement in FF will have significantly poorer mental health as reflected by measures of low mood, anxiety, functional impairment, and problematic behaviour. Specifically:
    a. Individuals who play in many leagues will have significantly poorer mental health compared to individuals who play in one or a few leagues.
    b. Individuals who spend a high amount of time *playing* FF will have significantly poorer mental health compared to individuals who spend less time playing FF.
    c. Individuals who spend a high amount of time *researching* FF will have significantly poorer mental health compared to individuals who spend less time researching FF.
    d. Individuals who spend a high amount of time *thinking about* FF will have significantly poorer mental health compared to individuals who spend less time thinking about FF.

Methods

Participants

The questionnaire was completed by 2,026 individuals, though 31 were subsequently removed for either not completing 75% of the questionnaire, or for reporting their age to be under the required criteria of 18 years. As such, data analysis was carried out on the remaining 1,995 individuals. Of the sample, 95.9% were male, 3.6% were female, and 0.5% opted not to say. Ninety-six different nationalities were represented in total, with 53.0% of the sample reporting themselves as British, 6.3% as Indian, 6.1% as Irish, 4.6% as American, 2.1% as Norwegian, and the remaining 91 nationalities represented by fewer than 2% each. The mean age of participants was 33.07 (*SD* = 10.18), with a range of 18 to 87. All participants currently played in at least one FF league, with the average numbers of leagues involved in being 6.13 (*SD* = 6.02). The average number of years' experience playing FF was 7.46 (*SD* = 4.94). Ethical approval was obtained from the first author's institution (Non-Invasive Human Ethics Committee application number 20/21-63V2).

Procedure

The questionnaire was advertised through social media (www.Twitter.com) and FantasyFootballScout.com – a well-known FF website. Information regarding the study was given, alongside a link to access the online questionnaire. The link commenced with an information sheet and consent statement. After reading these, the participant was required to give their consent by clicking 'yes' to confirm their understanding and participation. Only by selecting 'yes' could the participant then proceed to the next part of the questionnaire. The whole questionnaire from information sheet to final question took between 15 and 20 minutes to complete. All ethical procedures were adhered to and made clear to the participant, including

the option to not answer a question if they did not wish to. As a result of this, there were a number of missing data points. Nevertheless, response rates were still extremely high, with the lowest responded question ("On average, how many minutes per day do you spend thinking about Fantasy Football?") still being completed by 97.6% of participants.

Measures

The present study is the first to explore the mental health of individuals who play FF. As such, rather than create a custom-made questionnaire, it was deemed preferable to utilize pre-existing, and well validated and reliable questionnaires from other domains (i.e., clinical psychology). The wording of these questionnaires was then amended slightly where necessary such that they addressed FF. The full questionnaire consisted of six sections which gathered demographic data and responses towards mental health and emotional experiences (see Appendix A for the information sheet, Appendix B for the consent statement, and Appendix C for the full questionnaire). Due to the large number of significant findings, only the results towards the mental health measures will be reported in the present paper, with the remaining findings to be presented and discussed in a subsequent paper.

1. Demographic Information

The following demographic information was obtained for each participant: age, sex, nationality, current country of residence, and ethnicity.

2. FF Experience and Behaviour

To measure FF experience and behaviour, the following five questions were asked: 1) how many seasons had they been playing FF for ("FF Experience"); 2) how many FF leagues were they currently playing in ("FF Leagues"); 3) the average number of minutes they spent

per day on FF sites/apps ("Time Playing"); 4) the average number of minutes they spent per day on other FF-related activities such as listening to podcasts or browsing specific social media ("Time Researching"); and 5) the average number of minutes they spent per day thinking about FF ("Time Thinking"). Participants gave their answers using free text responses (as opposed to selecting various discrete categories, e.g., "0-29 minutes", "30-59 minutes", etc.). This data were then analysed and logical groupings of approximately equal numbers were created for each FF experience/behaviour measure (see Table 1.). Some of the response data required interpretation. For instance, where participants stated a lower or upper boundary (e.g., "at least 10" or "no more than 5"), the number given was recorded. Where participants stated a range (e.g., "60-90 minutes"), the mid-point of that range was recorded. Where a reasonable number was not interpretable (e.g., "too many" or "a lot"), the answer was deleted. Such instances were treated as missing data and not including in any statistical analyses. All post-hoc categorisation was carried out independently by the lead author and the second author and any discrepancies were discussed and agreed upon in an attempt to ensure consistency regarding decisions.

3. Patient Health Questionnaire Depression Scale (PHQ-9)

The PHQ-9 was used to measure low mood due to FF. The PHQ-9 has been validated across a wide range of ages and settings (Kroenke, Spitzer, & Williams, 2001) and is the most frequently used measure of depression/low mood globally (Wang et al., 2021). It asks individuals to report how often they have been bothered by various problems over the last two weeks using a four-point Likert scale ranging from 0 ('not at all') to 3 ('nearly every day'). Thus, higher scores indicate greater severity of low mood. To ensure relevance to FF, the wording of the questions was amended. For example, in the original PHQ-9, the individual is asked: "Over the last two weeks, how often have you been bothered by any of

the following problems?", with the subsequent first item being: "little interest or pleasure in doing things". Instead, in the adapted version, the individual is asked: "In the last two weeks, how often has fantasy football left you feeling that you have little interest or pleasure in doing other things?" Additionally, the traditional version contains nine items, however, it was felt that two ("Moving or speaking so slowly that other people could have noticed? Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual?" and "Thoughts that you would be better off dead, or of hurting yourself in some way?") were not appropriate, and therefore were removed from the questionnaire.

4. Generalised Anxiety Disorder Questionnaire (GAD-7)

The GAD-7 was used to measure feelings of anxiety due to FF. The GAD-7 has been found to have good validity and reliability across a range of populations and settings (Löwe et al., 2008; Spitzer et al., 2006). Similar to the PHQ-9, individuals are asked to report how often they have been bothered by various problems over the last two weeks using a four-point Likert scale ranging 0 ('not at all') to 3 ('nearly every day'), with higher scores reflecting greater severity of anxiety. Again, the wording of questions was amended to ensure relevance to FF. For example, in the original GAD-7, the individual is asked: "Over the last two weeks, how often have you been bothered by any of the following problems?", with the subsequent first item being: "feeling nervous, anxious, or on edge". Instead, in the adapted version, the individual is asked: "In the last two weeks, how often has fantasy football left you feeling nervous, anxious or on edge?" There are seven items in the GAD-7, and all were used in the current study.

5. Work and Social Adjustment Scale (WSAS)

The WSAS was used to measure everyday functional impairment due to FF. Developed by Marks (1986), the WSAS has been shown to have high reliability and validity (Cella et al., 2011; Mundt et al., 2002; Zahra et al., 2014). It contains five items that address an individual's ability to function with regard to work activities, home management, social leisure activities, private leisure activities, and relationships. Participants respond using a nine-point Likert scale ranging from 0 ('not at all') to 8 ('very severely'), with higher scores indicating greater everyday functional impairment. As before, the wording of questions was amended to ensure relevance to FF. For instance, rather than asking: "Because of my [problem] my ability to work is impaired", the current study asked: "Because of fantasy football my ability to work is impaired".

6. Problematic Online Gaming Questionnaire Short-Form (POGQ-S)

The POGQ-S was used to measure problematic FF behaviour across six dimensions: preoccupation, immersion, withdrawal, overuse, interpersonal conflicts, and social isolation. It was developed by Demetrovics and colleagues (2012) for use in the online gaming domain and the short-form used in the current study has been found by Pápay et al. (2013) to have satisfactory psychometric properties. Participants are required to respond to 12 items using a five-point Likert scale ranging from 1 ('never') to 5 ('always'), with higher scores reflecting more problematic behaviours. Again, the wording of questions was amended so that they were relevant to FF. For example, in place of the traditional POGQ-S item which asks: "How often do you daydream about gaming?", the question in the current study asked: "How often do you daydream about FF?". One question was also added to the POGQ-S. In addition to asking: "How often do you get restless or irritable if you are unable to play Fantasy Football for a few days?", it was thought that it would be necessary to also ask this question in relation to being unable to play for "over a week". Finally, participants were notified that for all

questions, the term "playing" FF referred to any time spent on a FF website/app, *as well as* other activities such as reading and listening to podcasts that have the primary aim of benefiting FF performance.

Data Analysis

Data were analysed using IBM SPSS (version 26), with an alpha level of $p = 0.05$ used to denote significance throughout. Mean scores were calculated for the four mental health measures (PHQ-9, GAD-7, WSAS, and POGQ-S) and a Pearson's correlation was conducted between these values and the five measures of FF experience/behaviour (FF Experience, FF Leagues, FF Time Playing, FF Time Researching, FF Time Thinking). One-way ANOVAs with Bonferroni post-hoc tests were then run with FF experience/behaviour as the independent variable and the mental health measures as dependent variables.

Results

Descriptive Statistics

Patient Health Questionnaire Depression Scale (PHQ-9): Low mood severity in the traditional PHQ-9 is classified as: 5-9 mild, 10-14 moderate, 15-19 moderately severe, and 20-27 severe (Kroenke et al., 2001). Given that only seven items were used in the current study, these boundaries were necessarily amended by using mean scores as opposed to summed scores (i.e., 0.56-1.00 = mild, 1.11-1.56 = moderate, etc.). Consequently, it was found that 19.5% of participants were classified as having experienced mild low mood towards FF, 3.1% for moderate low mood, 1.4% for moderately severe low mood, and 0.6%

for severe low mood. 24.6% of participants, therefore, were classified as having at least mild low mood towards FF, with 75.4% having no low mood.

Generalised Anxiety Disorder Questionnaire (GAD-7): GAD-7 scores of 5 (out of a maximum of 21) are usually classified as mild anxiety, scores of 10 as moderate anxiety, and scores of 15 as severe anxiety (Spitzer et al., 2006). To remain consistent with other measures, and to accommodate for any missing data, mean scores as opposed to summed scores were used. It was found that 16.2% of participants were classified as having experienced mild anxiety towards FF, 2.8% for moderate anxiety, and 0.6% for severe anxiety. 19.6% of participants, therefore, were classified as having at least mild anxiety towards FF, with 80.4% having no anxiety.

Work and Social Adjustment Scale (WSAS): WSAS scores of between 10 and 19 (out of a maximum of 40) are usually classified as significant functional impairment, with scores of 20 or more as moderately severe or worse functional impairment (Mundt et al., 2002). Again, mean scores as opposed to summed scores were used. 10.7% of participants were classified as having significant functional impairment due to FF and 2.9% of participants as moderately severe or worse functional impairment. 13.6% of participants, therefore, were classified as having at least a significant functional impairment due to FF, with 86.4% having no functional impairment.

Problematic Online Gaming Questionnaire Short-Form (POGQ-S): Responses to the POGQ-S are given on a scale from 1 to 5. A score of 32 out of 60 has been suggested as the cut-off point to classify problematic gaming (Papay et al., 2013), however, given that 13 (as opposed to 12) items were used in the current study, this point was amended in the same manner as for the PHQ-9. As with previous measures, mean scores as opposed to summed

scores were used. 17.3% of participants were classified as having problematic gaming behaviour. Means (and standard deviations) for the six dimensions were as follows: preoccupation = 2.62 (0.93), immersion = 2.60 (1.02), withdrawal = 1.87 (0.91), overuse = 2.04 (1.01), interpersonal conflicts = 1.58 (0.80), and social isolation = 1.56 (0.69).

Pearson's Correlation Analysis

In relation to hypothesis one, a number of significant correlations were found between FF experience/behaviour and measures of mental health (see Table 2), though several had *r* values below .20 and therefore would be considered 'very weak' (Evans, 1996). Of the others, the results found the following: i) weak, positive correlations between FF Time Playing and low mood, anxiety, and problematic behaviour; ii) weak, positive correlations between FF Time Researching and low mood, anxiety, functional impairment, and problematic behaviour; and, iii) weak, positive correlations between FF Time Thinking and low mood, anxiety, functional impairment, and problematic behaviour. In sum, increases in FF behaviours were correlated with increases (i.e., poorer) mental health scores, though correlations between FF experience and mental health were either non-significant or very weak.

Effect of FF Experience/Behaviour

FF Experience: One-way ANOVAs revealed statistically significant differences in low mood ($F(2,1986) = 5.12$, $p = 0.01$, $d = 0.01$) and anxiety ($F(2,1986) = 7.26$, $p < 0.01$, $d = 0.01$) for FF Experience (see Figure 1). Bonferroni post-hoc tests revealed where these significant differences lay and are denoted by subscripts in Table 3, along with means and standard deviations (this is also applied to all subsequent one-way ANOVA results). In

general, it was found that more experience in FF led to lower scores (indicating better mood and less anxiety towards FF).

FF Leagues: In relation to hypothesis 2a, the one-way ANOVAs revealed statistically significant differences in low mood ($F(2,1981) = 7.32$, $p < 0.01$, $d = 0.01$), anxiety ($F(2,1981) = 6.87$, $p < 0.01$, $d = 0.01$), functional impairment ($F(2,1960) = 9.61$, $p < 0.01$, $d = 0.01$) and problematic behaviour ($F(2,1978) = 22.10$, $p < 0.01$, $d = 0.02$) for FF Leagues. In general, it was found that playing in more FF leagues led to higher scores (indicating lower mood and worse anxiety, functional impairment, and problematic behaviour towards FF).

FF Time Playing: In relation to hypothesis 2b, the one-way ANOVAs revealed statistically significant differences in low mood ($F(3,1972) = 44.20$, $p < 0.01$, $d = 0.06$), anxiety ($F(3,1972) = 40.63$, $p < 0.01$, $d = 0.06$), functional impairment ($F(3,1951) = 23.39$, $p < 0.01$, $d = 0.03$) and problematic behaviour ($F(3,1969) = 75.00$, $p < 0.01$, $d = 0.10$) for FF Time Playing. In general, it was found that more time spent playing FF led to higher scores (indicating lower mood and worse anxiety, functional impairment, and problematic behaviour towards FF).

FF Time Researching: In relation to hypothesis 2c, the one-way ANOVAs revealed statistically significant differences in low mood ($F(3,1984) = 51.72$, $p < 0.01$, $d = 0.07$), anxiety ($F(3,1984) = 39.98$, $p < 0.01$, $d = 0.06$), functional impairment ($F(3,1963) = 48.99$, $p < 0.01$, $d = 0.07$) and problematic behaviour ($F(3,1981) = 101.57$, $p < 0.01$, $d = 0.13$) for FF Time Researching. In general, it was found that more time spent researching FF led to higher scores (indicating lower mood and worse anxiety, functional impairment, and problematic behaviour towards FF).

FF Time Thinking: In relation to hypothesis 2d, the one-way ANOVAs revealed statistically significant differences in low mood ($F(3,1944) = 90.01$, $p < 0.01$, $d = 0.12$), anxiety ($F(3,1944) = 70.78$, $p < 0.01$, $d = 0.10$), functional impairment ($F(3,1923) = 50.75$, $p < 0.01$, $d = 0.07$) and problematic behaviour ($F(3,1941) = 139.08$, $p < 0.01$, $d = 0.18$) for FF Time Thinking. In general, it was found that more time spent thinking about FF led to higher scores (indicating lower mood and worse anxiety, functional impairment, and problematic behaviour towards FF). Figure 2 shows the mean responses for low mood and anxiety for each group.

Discussion

The present study aimed to explore the mental health of individuals who play FF, and the impact that experience and behaviour can have on these measures. Specifically, adapted versions of the PHQ-9, GAD-7, WSAS, and POGQ-S were used to investigate low mood, anxiety, functional impairment, and problematic behaviour towards FF. The results revealed that high experience (i.e., more than 10 years of playing FF) produced significantly lower scores for low mood and anxiety, indicating better mental health. In terms of FF behaviours, individuals in the highest groups for engagement (many leagues played, over 45 minutes playing, over 60 minutes researching, and over 120 minutes thinking about FF per day) produced significantly higher scores for low mood, anxiety, functional impairment, and problematic behaviour (indicating poorer mental health). Within this, it is important to note that all effect sizes were below $d = 0.19$. Such values are generally regarded as indicating very small magnitudes based on the global conventions rendered by Cohen's (1988) seminal work. However, Cohen also recommended that effect size interpretations should be derived

by comparisons with previous studies in the specific area of the research, and therefore more work is needed before definitive conclusions can be made about the size of the effects found in the present study (Schäfer & Schwarz, 2019).

The findings partially support hypothesis one in that significant, positive correlations were found between FF engagement (in terms of Time Playing, Researching, and Thinking) and the four measures of mental health. However, unexpectedly, the correlations between FF Leagues and mental health, though significant, were all very weak (r = .10 to .15), whilst the correlations between FF Experience and mental health were either negative and very weak (low mood and anxiety) or non-significant (functional impairment and problematic behaviour). All four subcomponents of hypothesis two were supported by the results, with the groups reflecting highest engagement in FF (many leagues and high time spent playing, researching, and thinking) having significantly poorer mental health scores than the groups reflecting lower engagement.

Given that this is the first study to explore mental health in FF players, it was felt beneficial to also report the descriptive statistics of low mood, anxiety, and functional impairment as categorised according to the guidelines used in clinical settings. This will allow future studies to have a 'baseline' rate for comparison. In general, only a minority of players experienced mental health concerns towards FF (24.6% with at least mild low mood, 19.6% with at least mild anxiety, and 13.6% with at least a significant functional impairment). It is important to remember, however, that these questionnaires were amended to address FF, and therefore do not reflect prevalence of these mental health disorders themselves, but rather, the feelings of low mood, anxiety, and functional impairment *towards the FF game only*. Such a distinction is important, as it may be that these feelings are transient and only experienced whilst (or not long after/before) playing FF. Future research

should look to examine whether FF has a more holistic impact on mental health in everyday life. Irrespective, the low numbers reported here are perhaps encouraging given some of the anecdotal reports frequently seen online (Fantasy Football Hub, 2021; Jones, 2020) and are in line with growing evidence from video game research which suggests a positive, rather than negative, impact on wellbeing (see Kowal et al., 2021, and Pine et al., 2020, for recent reviews). The findings of this work, therefore, suggest that potential risk factors linked to poor mental health – such as a lack of control over the outcome of events or an uncertainty over attributing successes and failures – do not apply to FF, or are compensated for by the positive characteristics such as the inability to "binge" play the game.

The finding that more years of experience in FF led to better mental health scores was initially surprising, particularly as research within the video game literature has suggested the opposite to be the case (Bringula, Lugtu, & Aviles, 2015). However, there are a number of reasons that may explain why experience alleviates mental health issues. First, it could simply be a case of the survivorship effect. That is, only individuals who are able to manage their mental health appropriately will continue to play the game for such a long period; individuals who are unable to will simply stop playing and therefore would not be represented in the present study. Second, it may be that experienced players have developed various coping mechanisms to help them deal with the highs and lows of FF. For instance, acceptance and psychological distancing may be two useful techniques to cope with unsuccessful outcomes in FF (Dowsett, 2020). Third, it may be that the novelty of the game has "worn off" after a number of years of playing. This may not necessarily manifest itself behaviourally (correlations between FF experience and FF behaviours were negative, but very weak), but rather, mentally, such that the individual develops an emotional "numbness" to the effects of the game. These hypotheses warrant closer investigation.

Though it is not surprising that low mood, anxiety, functional impairment, and problematic behaviour all worsened with increased engagement in FF, the findings are still notable. To provide some context for the extent to which mental health scores increased with more engagement, whilst 'only' 24.6% of all participants were classified as having at least mild low mood towards FF, when examining only the high FF Time Thinking group (those who thought about FF for more than 120 minutes per day), this number rises to 44.0%. Similarly, those with at least mild anxiety towards FF rises from 19.6% in the whole sample, to 34.3% for the high FF Time Thinking group, and for at least significant functional impairment, from 13.6% to 37.4%. So whilst one in five FF players are likely to have at least mild anxiety towards the game, if that individual has what the present study categorises as high levels of engagement, then that likelihood increases to just one in three. These findings are in accordance with much of the video game literature (Andreassen et al., 2016; Halbrook et al., 2019; Jones et al., 2014) and highlight the importance of managing the amount of time dedicated to various FF activities.

Whilst incidence of low mood, anxiety, functional impairment, and problematic behaviour may be low amongst FF players – even those with the highest engagement – it is nevertheless a critically important topic for that minority who do experience negative mental health towards the game. It is unclear whether these issues persist outside of FF, but it is possible, and as such, awareness of the problem and receiving support are essential in ensuring that this activity continues to serve its primary purpose of entertaining people. These issues take on added importance with the growing link between FF and gambling. Columb et al. (2020) reported that over 50% of FF players had gambled on the game in the previous 12 months, and the line between FF and gambling continues to be blurred with the introduction of 'daily fantasy sports' which allows users to compete and win money over much shorter

periods (often a single day). Given that problematic gambling is associated with numerous detrimental outcomes ranging from poor mental health (Churchill & Farrell, 2018) to suicide (Wardle & McManus, 2021), it is essential that the findings from the present study are used to identify at-risk individuals (i.e., those engaging to excessive levels in various FF activities) and raise awareness of the potential consequences. Internet-interventions, particularly cognitive behaviour therapy interventions, have shown promise as an effective way to reduce gambling (Giroux et al., 2017 – systematic review; van der Maas et al., 2019 – scoping review) and for treating mental health (Calbring et al., 2017). These interventions should be made easily accessible to individuals highlighted as at-risk for both poor mental health and problematic gambling associated with FF.

Another potential consideration for future research is the role of social media in FF. Despite the game being played through FF-dedicated applications, for many, the majority of time spent engaging in FF discussions is on social media platforms. Within this, there are a myriad of complex cognitive and social psychological processes that may negatively impact one's mental health, for example, fear of missing out (FoMO). FoMO is the "pervasive apprehension that others might have rewarding experiences from which one is absent" (Przybylski, Murayama, DeHaan & Gladwell, 2013, p. 1843), with over 70% of adults admitting to feelings of 'missing out' (JWTIntellgience, 2012, as cited in, Abel, Buff, & Burr, 2016). Research has demonstrated that FoMO at its worst can lead to degradation of psychological well-being and a 'tethered sense of self' (Turkle, 2011), and this appears to be intensified by social media (Abel et al., 2016). If social media in relation to FF has the ability to exacerbate feelings of anxiety and missing out, it may be that social media should be avoided wherever possible for individuals prone to poor underlying mental health. Alternatively, it could be that social media in relation to FF helps to satisfy the individual's

need to belong and form interpersonal relationships (Maslow, 1943), or even enable further escape from difficulties in other aspects of their life (Billings & Ruihley, 2013), acting as a positive influence for mental health. The vital consideration here is whether there is a significant improvement or reduction in the user's mental health when participating in FF discussions on social media, above and beyond only direct participation in FF.

A potential limitation with regard to the study is the time at which the data were collected. Participants completed the questionnaire during February and March of 2021, at which point there was the global COVID-19 pandemic ongoing, and many countries (including the UK, where 51.6% of the sample were residing) were under national lockdowns. Whilst the wording of the questions instructed participants to respond *in relation to FF*, as opposed to life in general, it is certainly conceivable that some may not have adhered to that distinction. Given that the COVID-19 pandemic has seen significant increases in anxiety, depression, and stress across the world (Xiong et al. 2020), any misinterpretations may result in a more negative reflection of FF than would be the case had the data been collected under 'normal' circumstances. Alternatively, it is possible that the pandemic may have led to more favourable opinions. Research has regularly reported 'escapism' to be an important motivator in fantasy sports participation (Farquhar & Meeds, 2007; Spinda & Haridakis, 2008), and this may be more relevant during difficult life circumstances. As such, it may be that individuals report more positive attitudes towards FF than they otherwise would. A replication study outside of a global pandemic is warranted.

Irrespective of COVID-19, the timing of the questionnaire mid-way through the football season may also have impacted participants' responses. If an individual was having a particularly successful or unsuccessful season (or week in which they completed the questionnaire) then it could be that the feelings of low mood and anxiety, or perceptions of

functional impairment and problematic behaviour, were reported differently than if the questionnaire were completed out of season. Finally, it is important to also consider the limitations commonly associated with the questionnaire-based research method. Most pertinent to the current study is that mental health is a sensitive topic area and, as such, it is possible that some participants may have been inclined towards socially desirable responses or extreme response styles. This may be especially applicable given the niche nature of FF and how it is often associated with the "nerd" or "geek" subculture (Baruca & Ulusoy, 2017). However, with the whole protocol being carried out online with no face-to-face interaction, and with regular instructions reminding participants of their anonymity, it is hoped that these biases may have been kept to a minimum. This online approach does, though, create a further potential issue in that it may have increased the possibility of the study experiencing sampling bias, with only those FF players who regularly use Twitter or visit FantasyFootballScout.com likely to have been aware of the research.

Future research should look to take a qualitative approach to explore this topic in more depth. Interviews can provide richer data than quantitative approaches such as that of the current study and, given the lack of existing research in the area, may elucidate new ideas and theories that would otherwise not have been considered. Indeed, with mental health often seen as a sensitive subject, a more intimate, interview approach may actually be preferential (Morrison & Stomski, 2015). Exploring whether baseline mental health and major life events make individuals more susceptible to the negative impact of FF may be valuable, whilst longitudinal studies could also be utilized to investigate potential changes in mood and anxiety towards FF over time. In particular, looking across the course of one season and examining whether factors such as perceived locus of control, social support, and in-game

success effects any changes could be important in the long-term with regard to the development of interventions for at-risk players.

The present study has provided a first, exploratory step into the mental health of individuals who play FF. The results have revealed that whilst incidence of low mood, anxiety, functional impairment, and problematic behaviour may be low overall (13.6% to 24.6%), when constrained to only those with high levels of engagement in FF, these numbers rise considerably (34.3% to 43.0%). Indeed, individuals who play in more than five FF leagues, or who: i) spend longer than 45 minutes on FF apps/sites; ii) longer than 60 minutes researching FF; or, iii) longer than 120 minutes thinking about FF, report significantly poor mental health scores than those who engage less. This is an important finding and provides justification for the idea that more should be done to monitor the amount of time being dedicated to FF by individuals, both by the game-makers themselves and by the players. Interestingly, greater experience in FF led to reduced (that is, better) mental health scores. Implications with regard to mental health awareness are discussed, alongside ideas for future research that includes replicating the findings outside of a global pandemic, the utilisation of interview approaches, and exploring the reasons for the results regarding FF Experience.

558 *Table 1. Classification of FF Experience/Behaviour Groups*

Variable	**Categorisation Description**	**Number of Participants and % in that category**
FF Experience	Low = 1-5 years	871; 43.7%
	Moderate = 6-10 years	669; 33.5%
	High = 11+ years	449; 22.5%
FF Leagues	Single = 1 league	407; 20.4%
	Few = 2-5 leagues	841; 42.2%
	Many = 6+ leagues	736; 36.9%
FF Time Playing	Low = 1-14 minutes	563; 28.2%
	Low-to-Moderate = 15-29 minutes	545; 27.3%
	Moderate-to-High = 30-44 minutes	454; 22.8%
	High = 45+ minutes	414; 20.8%
FF Time Researching	Low = 0-15 minutes	478; 24.0%
	Low-to-Moderate = 16-30 minutes	512; 25.7%
	Moderate-to-High = 31-60 minutes	525; 26.3%
	High = 61+ minutes	473; 23.7%
FF Time Thinking	Low = 0-30 minutes	633; 31.7%
	Low-to-Moderate = 31-60 minutes	485; 24.3%
	Moderate-to-High = 60-120 minutes	474; 23.8%
	High = 121+ minutes	356; 17.8%

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Table 2. Pearson's Correlation Analysis

Variable	*M*	*SD*	1	2	3	4	5	6	7	8
1. FF Experience	7.46	4.94								
2. FF Leagues	6.13	6.02	-.00							
3. FF Time Playing	31.04	38.56	-.05*	.13**						
4. FF Time Researching	55.32	56.24	-.06**	.22**	.41**					
5. Time Thinking	94.49	105.35	-.02	.17**	.51**	.59**				
6. Low Mood	0.34	0.41	-.07**	.10**	.28**	.28**	.34**			
7. Anxiety	0.38	0.43	-.09**	.10**	.29**	.24**	.32**	.79**		
8. Functional Impairment	0.98	1.32	-.04	.10**	.18**	.24**	.22**	.60**	.53**	
9. Problematic Behaviour	2.03	0.66	-.03	.15**	.29**	.34**	.37**	.66**	.62**	.63**

Note. * indicates $p < .05$, ** indicates $p < .01$. *M* = mean, *SD* = standard deviation. Low mood, anxiety, functional impairment, and problematic behaviour are measured in relation to the FF game, not everyday life. FF Time is in minutes.

Table 3. Means (and standard deviations) for low mood, anxiety, functional impairment, and problematic behaviour for each FF Experience/Behaviour Group

Variable	Group	Low Mood	Anxiety	Functional Impairment	Problematic Behaviour
FF Experience	Low	0.37 (0.42)$_{a}$	0.41 (0.44)$_{a}$	1.00 (1.33)	2.05 (0.68)
	Moderate	0.34 (0.40)$_{ab}$	0.38 (0.43)$_{a}$	1.04 (1.37)	2.04 (0.67)
	High	0.29 (0.38)$_{b}$	0.31 (0.39)$_{b}$	0.89 (1.21)	2.00 (0.61)
FF Leagues	One	0.30 (0.38)$_{a}$	0.33 (0.37)$_{a}$	0.88 (1.23)$_{a}$	1.94 (0.63)$_{a}$
	Few	0.32 (0.40)$_{a}$	0.36 (0.42)$_{a}$	0.89 (1.22)$_{a}$	1.97 (0.65)$_{a}$
	Many	0.39 (0.43)$_{b}$	0.42 (0.46)$_{b}$	1.16 (1.46)$_{b}$	2.16 (0.67)$_{b}$
FF Time Playing	Low	0.24 (0.32)$_{a}$	0.27 (0.35)$_{a}$	0.66 (1.08)$_{a}$	1.79 (0.57)$_{a}$
	Low-to-Moderate	0.30 (0.35)$_{b}$	0.33 (0.35)$_{ab}$	0.96 (1.25)$_{b}$	1.95 (0.59)$_{b}$
	Moderate-to-High	0.36 (0.37)$_{b}$	0.40 (0.39)$_{b}$	1.11 (1.37)$_{b}$	2.12 (0.64)$_{c}$
	High	0.52 (0.54)$_{c}$	0.55 (0.56)$_{c}$	1.35 (1.53)$_{c}$	2.37 (0.72)$_{d}$
FF Time Researching	Low	0.21 (0.33)$_{a}$	0.26 (0.37)$_{a}$	0.59 (1.06)$_{a}$	1.73 (0.58)$_{a}$
	Low-to-Moderate	0.28 (0.35)$_{b}$	0.31 (0.35)$_{a}$	0.76 (1.09)$_{a}$	1.91 (0.58)$_{b}$
	Moderate-to-High	0.38 (0.41)$_{c}$	0.41 (0.44)$_{b}$	1.10 (1.31)$_{b}$	2.11 (0.62)$_{c}$
	High	0.50 (0.47)$_{d}$	0.53 (0.49)$_{c}$	1.51 (1.58)$_{c}$	2.39 (0.67)$_{d}$
FF Time Thinking	Low	0.18 (0.27)$_{a}$	0.22 (0.31)$_{a}$	0.59 (1.05)$_{a}$	1.71 (0.54)$_{a}$
	Low-to-Moderate	0.30 (0.33)$_{b}$	0.35 (0.36)$_{b}$	0.86 (1.08)$_{b}$	1.96 (0.56)$_{b}$
	Moderate-to-High	0.42 (0.39)$_{c}$	0.43 (0.40)$_{c}$	1.20 (1.36)$_{c}$	2.18 (0.61)$_{c}$
	High	0.57 (0.53)$_{d}$	0.59 (0.57)$_{d}$	1.57 (1.68)$_{d}$	2.47 (0.71)$_{d}$

Note: Means not sharing a subscript are significantly different at $p < .05$. Low mood, anxiety, functional impairment, and problematic behaviour are measured in relation to the FF game, not everyday life. FF Time is in minutes.

Figure 1. Low Mood (PHQ-9) and Anxiety (GAD-7) towards FF as a function of FF Experience

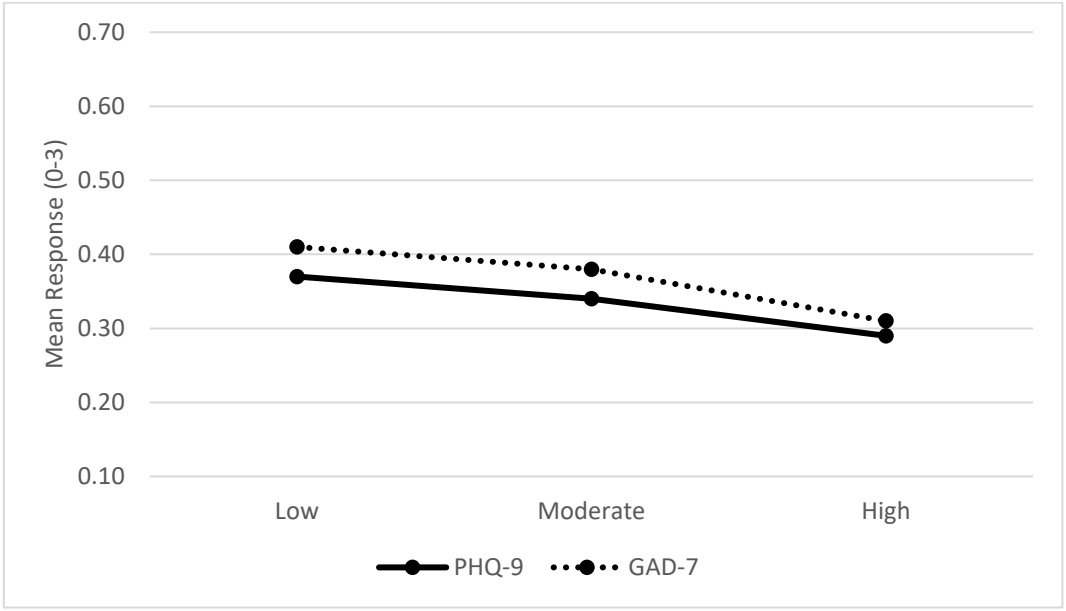
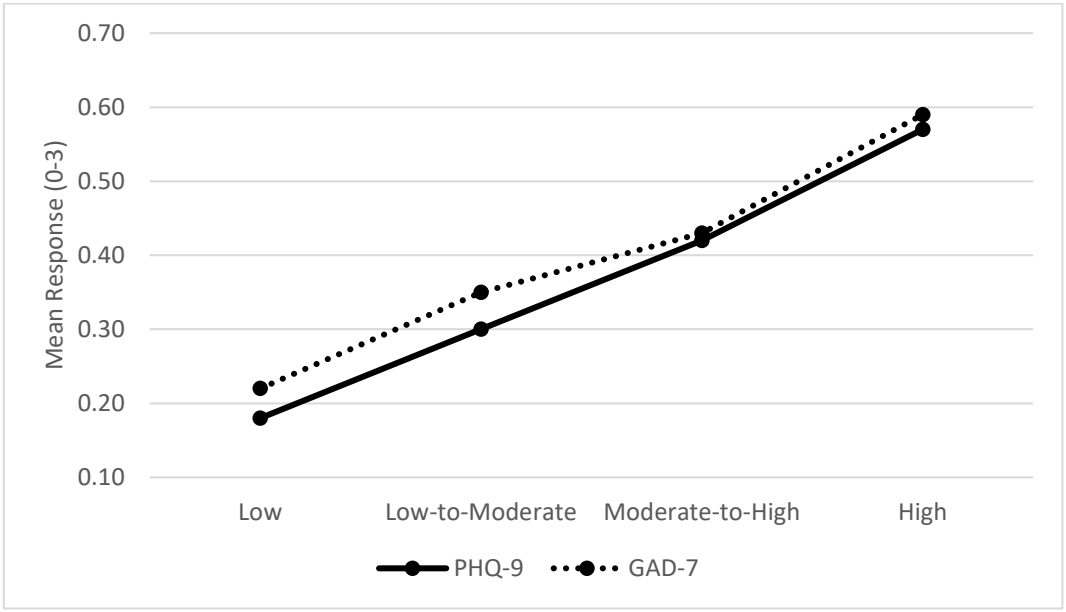


Figure 2. Low Mood (PHQ-9) and Anxiety (GAD-7) towrds FF as a function of FF Time Thinking



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805

Appendix

A. Participant Information Sheet

Dear potential participant,

Fantasy football has become a huge and global game and continues to grow each year. Despite this, little is known about the positive and negative mental effects involvement in fantasy football may have on individuals. We are researchers from Nottingham Trent University who are currently conducting research on this subject. So that you are fully informed before deciding whether to take part in this research, the aim of this sheet is to provide you with important information regarding the study.

Participation in the study involves completing a questionnaire pack which will take approximately 15 minutes. The questionnaire pack assesses your thoughts, behaviours, emotions, and experiences around fantasy football. It is important to note though, that participants do not have to answer all questions, and are free to miss out any questions they do not wish to respond to without giving a reason.

All **data will remain confidential and anonymous** – you will not be asked for your name or any other identifying features at any point. Study data will only be accessible by the principal investigator and his research associate. Data collected in this study may be used in future reports such as academic journals and conference presentations. However, again, no individual will be identifiable through such publication of data.

If data are to be useful, it is important that **participants answer honestly; there are no right or wrong answer**s. Participants are free to withdraw at any point, either during data collection or for up to three weeks following it by contacting the research team and providing the unique code they generated at the start of the questionnaire pack. If a participant chooses to withdraw from the study, all of his/her data will be destroyed immediately.

Thank you for taking the time to read this sheet and for considering participating in our research. If you have any questions or concerns regarding this research, please feel free to contact the principal investigator using the information below. Finally, your contribution to this research study would be invaluable so we do hope you decide to take part.

B. Consent Statement

• I agree to partake as a participant in this study.
• I am 18 years of age or older.
• From reading the information sheet in full, and from my discussion(s) with the researcher, I understand that my participation will involve completing a questionnaire online at a time and place convenient to me.
• I confirm that I have had the opportunity to ask questions about the study and where I have asked questions these have been answered to my satisfaction.
• I am aware that I can withdraw my consent to participate in the study for any reason without having to explain my withdrawal. I can withdraw my data from the study up to three weeks after completing the questionnaire, and electronic copies of my data will be stored securely.
• I understand that the information I provide in this study will be confidential and anonymous. If I wish to withdraw my participation or data from the study, I am aware that I can quote my unique code (generated by me as a part of completing the questionnaire) to the lead researcher and my data will be destroyed accordingly.
• I confirm I understand that my data will be stored (securely) for the purpose of publishing the research. I am aware that hard copies of my data will be destroyed after a period of five years using a confidential waste disposal system. All electronic copies will be overwritten to ensure that they are practically unrecoverable, before being securely erased (including backups and archived copies).
• I confirm I understand what is required of me and know of no reason, medical or otherwise, that would prevent me from partaking in this research.

By selecting 'Yes' below, I agree to participate in the present study.

Yes
No

C. Questionnaire: Exploring the Mental Health and Emotional Experiences of Individuals Who Play Fantasy Football

Section A – Demographic Information

Dear participant,

Thank you for choosing to take part in our study exploring mental health in fantasy football. The questionnaire is split across 6 sections and should take approximately 15 minutes to answer. Please answer honestly. Your responses are anonymous and there are no right or wrong answers.

2 What is your age?
3 To which gender identity do you most identify?
- Female
- Male
- Prefer Not To Say

4 What is your nationality?
5 What country do you live in?
6 What is your ethnic group? (Choose one option that best describes your ethnic group or background)
- White
- Mixed/Multiple Ethic Groups
- Asian/Asian British
- Black/African/Caribbean/Black British
- Other Ethnic Group

7 In order for us to identify your questionnaire in the event that you wish to withdraw your data, we need to generate a unique code. This will NOT be used for any identification purposes. Please generate your unique code by typing any eight characters below (these can be letters and numbers). E.g., Star8492. Please remember this code as you will need to reference it in the future if you wish to withdraw your data.

Section B – FF Experience and Behaviour

8 How many seasons have you played Fantasy Football for?
9 How many Fantasy Football leagues are you playing in this season?
10 Which Fantasy Football games/site do you play? (Please type below)
11 On average, how many minutes per DAY do you spend on the Fantasy Football site/app that you play? (e.g., fantasy.premierleague.com, fantrax.com, etc.)

12 On average, how many minutes per DAY do you spend on any other Fantasy Football-related activities (e.g., listening to podcasts, browsing specific social media, reading online)?
13 On average, how many minutes per DAY do you spend thinking about Fantasy Football?
14 On average at the weekend, what % of your conversations - either online, over phone/text, or in person - would you estimate are related to Fantasy Football?

Section C – Multidimensional Emotion Questionnaire (MEQ) – Adapted to FF

This section asks about your experience of 10 different emotions such as sad, happy, and afraid IN RELATION TO FANTASY FOOTBALL. Remember, THERE ARE NO RIGHT OR WRONG ANSWERS and your responses are completely ANONYMOUS, so please answer HONESTLY. We are interested in assessing four different parts of each emotion. Specifically, for each emotion, you will be asked to rate by selecting:

1) how OFTEN you experience the emotion IN RELATION TO FANTASY FOOTBALL
2) how INTENSE the emotion typically is when it occurs IN RELATION TO FANTASY FOOTBALL
3) how LONG-LASTING the emotion typically is when it occurs IN RELATION TO FANTASY FOOTBALL
4) how well you can REGULATE the emotion when it occurs (i.e., how well you can reduce or increase the emotion) IN RELATION TO FANTASY FOOTBALL

16 Emotion #1: Happy. a) How OFTEN?
- About once per month or less
- About once per week
- About once each day
- 2 or 3 times each day
- More than 3 times each day

16 Emotion #1: Happy. b) How INTENSE?
- Very low intensity
- Low intensity
- Moderate intensity
- High intensity
- Very high intensity

16 Emotion #1: Happy. c) How LONG-LASTING?
- Less than 1 minute
- 1-10 minutes
- 11-60 minutes
- 1-4 hours
- Longer than 4 h

16 Emotion #1: Happy. d) How easy to REGULATE?
- Very easy to regulate
- Easy to regulate
- Neither easy nor difficult to regulate
- Difficult to regulate
- Very difficult to regulate

17 Emotion #2: Sad. a) How OFTEN?
- About once per month or less

About once per week
About once each day
2 or 3 times each day
More than 3 times each day

17 Emotion #2: Sad. b) How INTENSE?
Very low intensity
Low intensity
Moderate intensity
High intensity
Very high intensity

17 Emotion #2: Sad. c) How LONG-LASTING?
Less than 1 minute
1-10 minutes
11-60 minutes
1-4 hours
Longer than 4 h

17 Emotion #2: Sad. d) How easy to REGULATE?
Very easy to regulate
Easy to regulate
Neither easy nor difficult to regulate
Difficult to regulate
Very difficult to regulate

18 Emotion #3: Afraid. a) How OFTEN?
About once per month or less
About once per week
About once each day
2 or 3 times each day
More than 3 times each day

18 Emotion #3: Afraid. b) How INTENSE?
Very low intensity
Low intensity
Moderate intensity
High intensity
Very high intensity

18 Emotion #3: Afraid. c) How LONG-LASTING?
Less than 1 minute
1-10 minutes
11-60 minutes
1-4 hours
Longer than 4 h

18 Emotion #3: Afraid. d) How easy to REGULATE?
Very easy to regulate
Easy to regulate
Neither easy nor difficult to regulate
Difficult to regulate
Very difficult to regulate

19 Emotion #4: Excited. a) How OFTEN?
About once per month or less
About once per week

About once each day
2 or 3 times each day
More than 3 times each day

19 Emotion #4: Excited. b) How INTENSE?
Very low intensity
Low intensity
Moderate intensity
High intensity
Very high intensity

19 Emotion #4: Excited. c) How LONG-LASTING?
Less than 1 minute
1-10 minutes
11-60 minutes
1-4 hours
Longer than 4 h

19 Emotion #4: Excited. d) How easy to REGULATE?
Very easy to regulate
Easy to regulate
Neither easy nor difficult to regulate
Difficult to regulate
Very difficult to regulate

20 Emotion #5: Angry. a) How OFTEN?
About once per month or less
About once per week
About once each day
2 or 3 times each day
More than 3 times each day

20 Emotion #5: Angry. b) How INTENSE?
Very low intensity
Low intensity
Moderate intensity
High intensity
Very high intensity

20 Emotion #5: Angry. c) How LONG-LASTING?
Less than 1 minute
1-10 minutes
11-60 minutes
1-4 hours
Longer than 4 h

20 Emotion #5: Angry. d) How easy to REGULATE?
Very easy to regulate
Easy to regulate
Neither easy nor difficult to regulate
Difficult to regulate
Very difficult to regulate

21 Emotion #6: Ashamed. a) How OFTEN?
About once per month or less
About once per week
About once each day

2 or 3 times each day
More than 3 times each day
21 Emotion #6: Ashamed. b) How INTENSE?
Very low intensity
Low intensity
Moderate intensity
High intensity
Very high intensity
21 Emotion #6: Ashamed. c) How LONG-LASTING?
Less than 1 minute
1-10 minutes
11-60 minutes
1-4 hours
Longer than 4 h
21 Emotion #6: Ashamed. d) How easy to REGULATE?
Very easy to regulate
Easy to regulate
Neither easy nor difficult to regulate
Difficult to regulate
Very difficult to regulate
22 Emotion #7: Enthusiastic. a) How OFTEN?
About once per month or less
About once per week
About once each day
2 or 3 times each day
More than 3 times each day
22 Emotion #7: Enthusiastic. b) How INTENSE?
Very low intensity
Low intensity
Moderate intensity
High intensity
Very high intensity
22 Emotion #7: Enthusiastic. c) How LONG-LASTING?
Less than 1 minute
1-10 minutes
11-60 minutes
1-4 hours
Longer than 4 h
22 Emotion #7: Enthusiastic. d) How easy to REGULATE?
Very easy to regulate
Easy to regulate
Neither easy nor difficult to regulate
Difficult to regulate
Very difficult to regulate
23 Emotion #8: Proud. a) How OFTEN?
About once per month or less
About once per week
About once each day
2 or 3 times each day

More than 3 times each day
23 Emotion #8: Proud. b) How INTENSE?
Very low intensity
Low intensity
Moderate intensity
High intensity
Very high intensity
23 Emotion #8: Proud. c) How LONG-LASTING?
Less than 1 minute
1-10 minutes
11-60 minutes
1-4 hours
Longer than 4 h
23 Emotion #8: Proud. d) How easy to REGULATE?
Very easy to regulate
Easy to regulate
Neither easy nor difficult to regulate
Difficult to regulate
Very difficult to regulate
24 Emotion #9: Anxious. a) How OFTEN?
About once per month or less
About once per week
About once each day
2 or 3 times each day
More than 3 times each day
24 Emotion #9: Anxious. b) How INTENSE?
Very low intensity
Low intensity
Moderate intensity
High intensity
Very high intensity
24 Emotion #9: Anxious. c) How LONG-LASTING?
Less than 1 minute
1-10 minutes
11-60 minutes
1-4 hours
Longer than 4 h
24 Emotion #9: Anxious. d) How easy to REGULATE?
Very easy to regulate
Easy to regulate
Neither easy nor difficult to regulate
Difficult to regulate
Very difficult to regulate
25 Emotion #10: Inspired. a) How OFTEN?
About once per month or less
About once per week
About once each day
2 or 3 times each day
More than 3 times each day

25 Emotion #10: Inspired. b) How INTENSE?
- Very low intensity
- Low intensity
- Moderate intensity
- High intensity
- Very high intensity

25 Emotion #10: Inspired. c) How LONG-LASTING?
- Less than 1 minute
- 1-10 minutes
- 11-60 minutes
- 1-4 hours
- Longer than 4 h

25 Emotion #10: Inspired. d) How easy to REGULATE?
- Very easy to regulate
- Easy to regulate
- Neither easy nor difficult to regulate
- Difficult to regulate
- Very difficult to regulate

Section D – Patient Health Questionnaire (PHQ-9) and Generalized Anxiety Disorder (GAD-7) – Adapted to FF

26 This section asks about how frequently you have experienced a variety of situations. Please rate on a scale from 1 (Not at all) to 4 (Nearly every day). Remember, THERE ARE NO RIGHT OR WRONG ANSWERS so please answer HONESTLY. Your responses are COMPLETELY ANONYMOUS.

In the last two weeks, how often has Fantasy Football left you feeling that you have little interest or pleasure in doing other things?

Not at all	Several days	More than half the days	Nearly every day

In the last two weeks, how often has Fantasy Football left you feeling down, depressed, or hopeless?

Not at all	Several days	More than half the days	Nearly every day

In the last two weeks, how often have you had trouble falling or staying asleep, or sleeping too much, because of Fantasy Football?

Not at all	Several days	More than half the days	Nearly every day

In the last two weeks, how often has Fantasy Football left you feeling tired or having little energy?

Not at all	Several days	More than half the days	Nearly every day

In the last two weeks, how often have you have poor appetite or overeating because of Fantasy Football?

Not at all	Several days	More than half the days	Nearly every day

In the last two weeks, how often has Fantasy Football left you feeling bad about yourself - or that you are a failure or have let yourself or your family down?

Not at all	Several days	More than half the days	Nearly every day

In the last two weeks, how often have you had trouble concentrating on things, such as reading the newspaper or watching television, because of Fantasy Football?

Not at all	Several days	More than half the days	Nearly every day

In the last two weeks how often has Fantasy Football left you feeling nervous, anxious or on edge?

Not at all	Several days	More than half the days	Nearly every day

In the last two weeks how often has Fantasy Football left you unable to stop or control worrying?

Not at all	Several days	More than half the days	Nearly every day

In the last two weeks how often has Fantasy Football resulted in you worrying too much about different things?

Not at all	Several days	More than half the days	Nearly every day

In the last two weeks how often has Fantasy Football resulted in you having trouble relaxing?

Not at all	Several days	More than half the days	Nearly every day

In the last two weeks how often has Fantasy Football left you so restless that it is hard to sit still?

Not at all	Several days	More than half the days	Nearly every day

In the last two weeks how often has Fantasy Football resulted in you becoming easily annoyed or irritable?

Not at all	Several days	More than half the days	Nearly every day

In the last two weeks how often has Fantasy Football resulted in you feeling afraid as if something awful might happen?

Not at all	Several days	More than half the days	Nearly every day

Section E – Work and Social Adjustment Scale (WSAS) – Adapted to FF

27 This section asks about your experiences carrying out certain day-to-day tasks in your life. Remember, THERE ARE NO RIGHT OR WRONG ANSWERS so please answer HONESTLY. Your responses are completely ANONYMOUS. Please rate your agreement with the five statements below on a scale from 0 (Not at all) to 8 (Very Severely).

Because of Fantasy Football my ability to work is impaired.

0 (Not at all)	1	2 (Slightly)	3	4 (Definitely)	5	6 (Markedly)	7	8 (Very severely)

Because of Fantasy Football my home management (cleaning, tidying, shopping, cooking, looking after home or children, paying bills) is impaired.

0 (Not at all)	1	2 (Slightly)	3	4 (Definitely)	5	6 (Markedly)	7	8 (Very severely)

Because of Fantasy Football my social leisure activities (with other people e.g., parties, bars, clubs, outings, visits, dating, home entertaining) are impaired.

0 (Not at all)	1	2 (Slightly)	3	4 (Definitely)	5	6 (Markedly)	7	8 (Very severely)

Because of Fantasy Football my private leisure activities (done alone, such as reading, gardening, walking alone) are impaired.

0 (Not at all)	1	2 (Slightly)	3	4 (Definitely)	5	6 (Markedly)	7	8 (Very severely)

Because of Fantasy Football my ability to form and maintain close relationships with others, including those I live with, is impaired.

0 (Not at all)	1	2 (Slightly)	3	4 (Definitely)	5	6 (Markedly)	7	8 (Very severely)

Section F – Problematic Online Gaming Questionnaire – Short-Form (POGQ-S) – Adapted to FF

28 The final section asks about how often certain emotions or experiences occur with regards to fantasy football. Please note that for all questions, “playing FF” refers to any time spent on the website or app AS WELL AS other activities such as reading or listening to podcasts that have the primary aim of helping Fantasy Football performance. Remember, THERE ARE NO RIGHT OR WRONG ANSWERS so please answer HONESTLY. Your responses are COMPLETELY ANONYMOUS. Please rate on a scale from 1 (Never) to 5 (Always).

When you are not playing Fantasy Football, how often do you think about playing or think about how it would feel to play at that moment?

Never	Seldom	Occasionally	Often	Always

How often do you lose track of time when playing Fantasy Football?

Never	Seldom	Occasionally	Often	Always

How often do you get restless or irritable if you are unable to play Fantasy Football for a few days?

Never	Seldom	Occasionally	Often	Always

How often do you get restless or irritable if you are unable to play Fantasy Football for over a week?

Never	Seldom	Occasionally	Often	Always

How often do you feel that you should reduce the amount of time you spend playing Fantasy Football?

Never	Seldom	Occasionally	Often	Always

How often do you argue with your parents and/or partner because of Fantasy Football?

Checkbox

Never	Seldom	Occasionally	Often	Always

How often do you fail to meet up with a friend because you were playing Fantasy Football?

Never	Seldom	Occasionally	Often	Always

How often do you daydream about Fantasy Football?

Never	Seldom	Occasionally	Often	Always

How often do you play Fantasy Football longer than originally planned?

Never	Seldom	Occasionally	Often	Always

How often do you feel depressed or irritable when not playing Fantasy Football only for these feelings to disappear when you start playing?

Never	Seldom	Occasionally	Often	Always

How often do you unsuccessfully try to reduce the time you spend on Fantasy Football?

Never	Seldom	Occasionally	Often	Always

How often do the people around you complain that you are playing Fantasy Football too much?

Never	Seldom	Occasionally	Often	Always

How often do you neglect other activities because you would rather play Fantasy Football?

Never	Seldom	Occasionally	Often	Always

The questionnaire is now complete. Thank you very much for participating!

If you have any questions or concerns regarding this research or would like to obtain a copy of the results when the data is analysed, please contact the researcher below.