1   **Exploring the Mental Health of Individuals who Play Fantasy Football**

2

3   **Abstract**

4   Fantasy football ("soccer" in North America, Australasia, and certain other countries)

5   is a rapidly growing online game with over seven million individuals playing the Official

6   Premier League version alone. Whilst there is an abundance of anecdotal evidence

7   associating the game with mental health concerns, to date there has been no empirical

8   research conducted in this field. This study aimed to address this by having fantasy football

9   players (N = 1,995) complete questionnaires measuring low mood, anxiety, functional

10   impairment, and problematic behaviour in relation to playing the game. Descriptive statistics

11   revealed that only a minority of players experienced mental health concerns towards fantasy

12   football, however, it was also found that individuals who engaged most in fantasy football

13   (i.e., high time spent playing, researching, and thinking about the game) had significantly

14   worse mental health scores towards the game than those who engaged less. Interestingly,

15   experience in fantasy football showed the opposite effect. It may be that players of fantasy

16   football establish coping mechanisms over time or develop an emotional numbness to the

17   game. Future research should explore this, as well as investigate other factors (such as in-

18   game success, social media use, and perceived locus of control) that may impact the feelings

19   of low mood, anxiety, functional impairment, and problematic behaviour that can exist when

20   playing fantasy football.

21

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

23

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

48   of thousands of pounds based on performance over a much shorter period, such as a given

49   day or week (DraftKings, n.d.). Given the rising popularity and importance of the game, it

50   would seem prudent for research to be conducted that explores various psychological and

51   sociological factors associated with FF. In similar domains such as video gaming, gambling,

52   and internet use, there is an abundance of literature examining everything from motivations

53   for participation (Hamari & Keronen, 2017) to risks of self-harm (Marchant et al., 2017), yet

54   in FF, very little published, peer-reviewed work exists. The current study aims to address this

55   by taking an exploratory look at the relationship between fantasy football engagement and

56   various measures of mental health; specifically, low mood, anxiety, functional impairment,

57   and problematic behaviour.

58   One of the few studies that has been carried out within the FF domain is that by

59   Columb, Griffiths, and O'Gara (2020). The authors' main aim was to identify the prevalence

60   of internet addiction within FF players, and the characteristics of such individuals. 684

61   participants completed a questionnaire, with the results revealing that 17.5% of individuals

62   met the diagnostic criteria for internet addiction; a number that is "on the higher end of

63   expected internet addiction" (p. 8). Interestingly, data on gambling was also obtained, with

64   50.6% of participants reporting to have gambled on FF in the previous 12 months. Given the

65   well-founded relationship between both internet addiction and mental health (Kuss et al.,

66   2013) and gambling and mental health (Nower et al., 2018), this study points towards a

67   possible similar association with FF.

68   Such an idea is also consistent with anecdotal evidence linking FF and mental health

69   issues (Kahn, 2016). There is an abundance of references to the mental health issues of FF

70   players on social media – some possibly flippant (e.g., Aatish, 2019), others seemingly not so

71   (e.g., Kamaran, 2021) – and one only needs to scroll briefly amongst comments to posts from

72 the Official Fantasy Premier League Twitter account to see the potential damaging effect that

73 exists (OfficialFPL, 2021). Indeed, such is the everyday nature of these comments that one of

74 the leading FF websites in the world – FantasyFootballScout.com – have dedicated articles

75 and podcast episodes to discussing mental health in the game (Fantasy Football Scout, 2020;

76 March, 2019; Watts, 2021). Whilst no empirical evidence currently exists to validate these

77 concerns, work by Dhurup and Dlodlo (2013) hints at the link between FF and wellbeing.

78 The focus of their paper was the motivations behind participation, but in identifying factors

79 such as eustress, external rewards, and enjoyment as important reasons for playing, it lends

80 evidence to the idea that wellbeing may be affected (both positively and negatively) when

81 playing FF. Research into other fantasy sports is marginally more abundant, though again,

82 these have tended to focus on other psychological-based factors, rather than mental health

83 and wellbeing (e.g., social-psychological reactions to external outcomes, Dwyer et al., 2016;

84 motivations for participation, Brown et al., 2012; and personality types, Lee et al., 2011).

85 A similar area in which there has been considerable research, though, is that of video

86 game playing. Studies have found significant associations between video gaming and anxiety,

87 depression, and life satisfaction (Andreassen et al., 2016; Mentzoni et al., 2011), though it

88 should be noted that in both cases, findings were related to individuals classified as having

89 video game *addiction*. This may be important, as numerous research has argued the case that

90 video games can have a positive influence on well-being when played more moderately

91 (Halbrook et al., 2019; Jones et al., 2014), and studies have demonstrated as such with

92 findings for decreased depression (Durkin & Barber, 2002), increased positive affect (Wang

93 et al., 2008), and reduced stress (Wack & Tantleff-Dunn, 2009). Indeed, such are the

94 potential benefits of playing video games for an individual's mental health that it has become

95 a type of alternative treatment promoted by some therapists, and considerable research exists

96   exploring the effectiveness of video gaming to help regulate mental and emotional wellbeing

97   (Villani et al., 2018). A recent systematic review by Pine et al. (2020) concluded that casual

98   video gaming is a promising approach with regard to improving anxiety, mood, stress, and

99   depressive symptoms.

100   It is important to note, however, that there are unique characteristics of FF that may

101   lead to contrasting findings to that of the video game literature. First, compared to traditional

102   video gaming, the FF player has much less control over the outcome of events, and therefore

103   their success. A lack of control has been identified as a risk factor in mental health (Yu et al.,

104   2018) and therefore the potential benefits of gaming may be reduced in FF. Second, whilst

105   the inherent social aspect of FF (you play against other humans as opposed to a computer)

106   may be a positive, it lacks the cooperative element that some researchers have suggested is

107   key to fostering the beneficial effects found in video gaming (Halbrook et al., 2019). Third,

108   many video games are played within deliberately designed environments/modes that generate

109   an incrementally challenging experience, and then to reward the user for success (relieving

110   stress) or penalise the user for failure (exacerbate stress). In FF, however, the difficulty of the

111   game itself never changes and therefore the subsequent experience of success and failure may

112   be harder for the individual to pinpoint. This uncertainty may, again, negatively impact the

113   mental wellbeing of players.

114   These three characteristics suggest how FF may differ to research that has found

115   *positive* benefits of gaming, but there is also another characteristic of FF that may lead it to

116   contrast with the studies that have reported *negative* effects of gaming. For instance, the "in-

117   real-time" game play mode of FF presents an obstacle to binge-gaming. That is, the fact that

118   FF is based on real-world events – and therefore cannot be consumed at the will of the player

119   as with traditional video gaming – may reduce the prevalence of excessive and addictive

120   play, factors which are known to have a harmful effect on wellbeing. Finally, it should also

121   be recognised that the nature of FF makes it more closely tied to gambling than most

122   traditional video gaming. Columb et al. (2020) reported that 50.6% of FF participants had

123   gambled on FF in the previous year and therefore, given the large body of evidence

124   connecting online gambling with mental health concerns (see Scholes-Balog & Hemphill,

125   2012, for a review), FF may be at risk of the same.

126   **Aims of the Present Study**

127   With the present study being (to the authors' knowledge) the first to investigate the

128   mental health of individuals who play FF, an exploratory approach will be taken. That is, the

129   present study first aims to utilize descriptive statistics to provide a picture of the topic in

130   question. With regards to mental health, measures of low mood, anxiety, functional

131   impairment, and problematic behaviour will be gathered. With regards to FF, the study will

132   examine experience (how many years the individual has played the game) and four measures

133   of engagement, specifically: number of leagues played in, and amount of time spent playing

134   the game, researching around the game, and thinking about the game. The relationship

135   between these FF experience/behaviour measures, and mental health measures will be

136   investigated with a Pearson's correlation analysis. Finally, differences in mental health

137   measures between individuals of varying FF experience/behaviour will be examined using

138   one-way ANOVAs. It is important to clarify that the study will explore the extent to which

139   the FF game generates concerning mental health experiences (e.g., low mood, anxiety,

140   functional impairment, and problematic behaviour), as opposed to whether FF is related more

141   holistically to the mental health of players in everyday life. Based on the existing video

142   gaming literature which suggests positive benefits except in excessive/addictive instances of

143   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.

167   **Methods**

168   **Participants**

169   The questionnaire was completed by 2,026 individuals, though 31 were subsequently

170   removed for either not completing 75% of the questionnaire, or for reporting their age to be

171   under the required criteria of 18 years. As such, data analysis was carried out on the

172   remaining 1,995 individuals. Of the sample, 95.9% were male, 3.6% were female, and 0.5%

173   opted not to say. Ninety-six different nationalities were represented in total, with 53.0% of

174   the sample reporting themselves as British, 6.3% as Indian, 6.1% as Irish, 4.6% as American,

175   2.1% as Norwegian, and the remaining 91 nationalities represented by fewer than 2% each.

176   The mean age of participants was 33.07 ($SD = 10.18$), with a range of 18 to 87. All

177   participants currently played in at least one FF league, with the average numbers of leagues

178   involved in being 6.13 ($SD = 6.02$). The average number of years' experience playing FF was

179   7.46 ($SD = 4.94$). Ethical approval was obtained from the first author's institution (Non-

180   Invasive Human Ethics Committee application number 20/21-63V2).

181   **Procedure**

182   The questionnaire was advertised through social media (www.Twitter.com) and

183   FantasyFootballScout.com – a well-known FF website. Information regarding the study was

184   given, alongside a link to access the online questionnaire. The link commenced with an

185   information sheet and consent statement. After reading these, the participant was required to

186   give their consent by clicking 'yes' to confirm their understanding and participation. Only by

187   selecting 'yes' could the participant then proceed to the next part of the questionnaire. The

188   whole questionnaire from information sheet to final question took between 15 and 20 minutes

189   to complete. All ethical procedures were adhered to and made clear to the participant, including

190 the option to not answer a question if they did not wish to. As a result of this, there were a

191 number of missing data points. Nevertheless, response rates were still extremely high, with the

192 lowest responded question ("On average, how many minutes per day do you spend thinking

193 about Fantasy Football?") still being completed by 97.6% of participants.

194 **Measures**

195 The present study is the first to explore the mental health of individuals who play FF.

196 As such, rather than create a custom-made questionnaire, it was deemed preferable to utilize

197 pre-existing, and well validated and reliable questionnaires from other domains (i.e., clinical

198 psychology). The wording of these questionnaires was then amended slightly where

199 necessary such that they addressed FF. The full questionnaire consisted of six sections which

200 gathered demographic data and responses towards mental health and emotional experiences

201 (see Appendix A for the information sheet, Appendix B for the consent statement, and

202 Appendix C for the full questionnaire). Due to the large number of significant findings, only

203 the results towards the mental health measures will be reported in the present paper, with the

204 remaining findings to be presented and discussed in a subsequent paper.

205 *1. Demographic Information*

206 The following demographic information was obtained for each participant: age, sex,

207 nationality, current country of residence, and ethnicity.

208 *2. FF Experience and Behaviour*

209 To measure FF experience and behaviour, the following five questions were asked: 1) how

210 many seasons had they been playing FF for ("FF Experience"); 2) how many FF leagues

211 were they currently playing in ("FF Leagues"); 3) the average number of minutes they spent

212   per day on FF sites/apps ("Time Playing"); 4) the average number of minutes they spent per

213   day on other FF-related activities such as listening to podcasts or browsing specific social

214   media ("Time Researching"); and 5) the average number of minutes they spent per day

215   thinking about FF ("Time Thinking"). Participants gave their answers using free text

216   responses (as opposed to selecting various discrete categories, e.g., "0-29 minutes", "30-59

217   minutes", etc.). This data were then analysed and logical groupings of approximately equal

218   numbers were created for each FF experience/behaviour measure (see Table 1.). Some of the

219   response data required interpretation. For instance, where participants stated a lower or upper

220   boundary (e.g., "at least 10" or "no more than 5"), the number given was recorded. Where

221   participants stated a range (e.g., "60-90 minutes"), the mid-point of that range was recorded.

222   Where a reasonable number was not interpretable (e.g., "too many" or "a lot"), the answer

223   was deleted. Such instances were treated as missing data and not including in any statistical

224   analyses. All post-hoc categorisation was carried out independently by the lead author and

225   the second author and any discrepancies were discussed and agreed upon in an attempt to

226   ensure consistency regarding decisions.

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

228   The PHQ-9 was used to measure low mood due to FF. The PHQ-9 has been validated

229   across a wide range of ages and settings (Kroenke, Spitzer, & Williams, 2001) and is the

230   most frequently used measure of depression/low mood globally (Wang et al., 2021). It asks

231   individuals to report how often they have been bothered by various problems over the last

232   two weeks using a four-point Likert scale ranging from 0 ('not at all') to 3 ('nearly every

233   day'). Thus, higher scores indicate greater severity of low mood. To ensure relevance to FF,

234   the wording of the questions was amended. For example, in the original PHQ-9, the

235   individual is asked: "Over the last two weeks, how often have you been bothered by any of

236 the following problems?", with the subsequent first item being: "little interest or pleasure in

237 doing things". Instead, in the adapted version, the individual is asked: "In the last two weeks,

238 how often has fantasy football left you feeling that you have little interest or pleasure in doing

239 other things?" Additionally, the traditional version contains nine items, however, it was felt

240 that two ("Moving or speaking so slowly that other people could have noticed? Or the

241 opposite – being so fidgety or restless that you have been moving around a lot more than

242 usual?" and "Thoughts that you would be better off dead, or of hurting yourself in some

243 way?") were not appropriate, and therefore were removed from the questionnaire.

244   *4. Generalised Anxiety Disorder Questionnaire (GAD-7)*

245   The GAD-7 was used to measure feelings of anxiety due to FF. The GAD-7 has been

246 found to have good validity and reliability across a range of populations and settings (Löwe

247 et al., 2008; Spitzer et al., 2006). Similar to the PHQ-9, individuals are asked to report how

248 often they have been bothered by various problems over the last two weeks using a four-point

249 Likert scale ranging 0 ('not at all') to 3 ('nearly every day'), with higher scores reflecting

250 greater severity of anxiety. Again, the wording of questions was amended to ensure relevance

251 to FF. For example, in the original GAD-7, the individual is asked: "Over the last two weeks,

252 how often have you been bothered by any of the following problems?", with the subsequent

253 first item being: "feeling nervous, anxious, or on edge". Instead, in the adapted version, the

254 individual is asked: "In the last two weeks, how often has fantasy football left you feeling

255 nervous, anxious or on edge?" There are seven items in the GAD-7, and all were used in the

256 current study.

257   *5. Work and Social Adjustment Scale (WSAS)*

258   The WSAS was used to measure everyday functional impairment due to FF.

259   Developed by Marks (1986), the WSAS has been shown to have high reliability and validity

260   (Cella et al., 2011; Mundt et al., 2002; Zahra et al., 2014). It contains five items that address

261   an individual's ability to function with regard to work activities, home management, social

262   leisure activities, private leisure activities, and relationships. Participants respond using a

263   nine-point Likert scale ranging from 0 ('not at all') to 8 ('very severely'), with higher scores

264   indicating greater everyday functional impairment. As before, the wording of questions was

265   amended to ensure relevance to FF. For instance, rather than asking: "Because of my

266   [problem] my ability to work is impaired", the current study asked: "Because of fantasy

267   football my ability to work is impaired".

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

269   The POGQ-S was used to measure problematic FF behaviour across six dimensions:

270   preoccupation, immersion, withdrawal, overuse, interpersonal conflicts, and social isolation.

271   It was developed by Demetrovics and colleagues (2012) for use in the online gaming domain

272   and the short-form used in the current study has been found by Pápay et al. (2013) to have

273   satisfactory psychometric properties. Participants are required to respond to 12 items using a

274   five-point Likert scale ranging from 1 ('never') to 5 ('always'), with higher scores reflecting

275   more problematic behaviours. Again, the wording of questions was amended so that they

276   were relevant to FF. For example, in place of the traditional POGQ-S item which asks: "How

277   often do you daydream about gaming?", the question in the current study asked: "How often

278   do you daydream about FF?". One question was also added to the POGQ-S. In addition to

279   asking: "How often do you get restless or irritable if you are unable to play Fantasy Football

280   for a few days?", it was thought that it would be necessary to also ask this question in relation

281   to being unable to play for "over a week". Finally, participants were notified that for all

282   questions, the term "playing" FF referred to any time spent on a FF website/app, *as well as*

283   other activities such as reading and listening to podcasts that have the primary aim of

284   benefiting FF performance.

285   **Data Analysis**

286   Data were analysed using IBM SPSS (version 26), with an alpha level of $p = 0.05$

287   used to denote significance throughout. Mean scores were calculated for the four mental

288   health measures (PHQ-9, GAD-7, WSAS, and POGQ-S) and a Pearson's correlation was

289   conducted between these values and the five measures of FF experience/behaviour (FF

290   Experience, FF Leagues, FF Time Playing, FF Time Researching, FF Time Thinking). One-

291   way ANOVAs with Bonferroni post-hoc tests were then run with FF experience/behaviour as

292   the independent variable and the mental health measures as dependent variables.

293

294   **Results**

295   **Descriptive Statistics**

296   *Patient Health Questionnaire Depression Scale (PHQ-9):* Low mood severity in the

297   traditional PHQ-9 is classified as: 5-9 mild, 10-14 moderate, 15-19 moderately severe, and

298   20-27 severe (Kroenke et al., 2001). Given that only seven items were used in the current

299   study, these boundaries were necessarily amended by using mean scores as opposed to

300   summed scores (i.e., 0.56-1.00 = mild, 1.11-1.56 = moderate, etc.). Consequently, it was

301   found that 19.5% of participants were classified as having experienced mild low mood

302   towards FF, 3.1% for moderate low mood, 1.4% for moderately severe low mood, and 0.6%

303   for severe low mood. 24.6% of participants, therefore, were classified as having at least mild

304   low mood towards FF, with 75.4% having no low mood.

305   *Generalised Anxiety Disorder Questionnaire (GAD-7):* GAD-7 scores of 5 (out of a

306   maximum of 21) are usually classified as mild anxiety, scores of 10 as moderate anxiety, and

307   scores of 15 as severe anxiety (Spitzer et al., 2006). To remain consistent with other

308   measures, and to accommodate for any missing data, mean scores as opposed to summed

309   scores were used. It was found that 16.2% of participants were classified as having

310   experienced mild anxiety towards FF, 2.8% for moderate anxiety, and 0.6% for severe

311   anxiety. 19.6% of participants, therefore, were classified as having at least mild anxiety

312   towards FF, with 80.4% having no anxiety.

313   *Work and Social Adjustment Scale (WSAS):* WSAS scores of between 10 and 19 (out

314   of a maximum of 40) are usually classified as significant functional impairment, with scores

315   of 20 or more as moderately severe or worse functional impairment (Mundt et al., 2002).

316   Again, mean scores as opposed to summed scores were used. 10.7% of participants were

317   classified as having significant functional impairment due to FF and 2.9% of participants as

318   moderately severe or worse functional impairment. 13.6% of participants, therefore, were

319   classified as having at least a significant functional impairment due to FF, with 86.4% having

320   no functional impairment.

321   *Problematic Online Gaming Questionnaire Short-Form (POGQ-S):* Responses to the

322   POGQ-S are given on a scale from 1 to 5. A score of 32 out of 60 has been suggested as the

323   cut-off point to classify problematic gaming (Papay et al., 2013), however, given that 13 (as

324   opposed to 12) items were used in the current study, this point was amended in the same

325   manner as for the PHQ-9. As with previous measures, mean scores as opposed to summed

326   scores were used. 17.3% of participants were classified as having problematic gaming

327   behaviour. Means (and standard deviations) for the six dimensions were as follows:

328   preoccupation = 2.62 (0.93), immersion = 2.60 (1.02), withdrawal = 1.87 (0.91), overuse =

329   2.04 (1.01), interpersonal conflicts = 1.58 (0.80), and social isolation = 1.56 (0.69).

330   **Pearson's Correlation Analysis**

331   In relation to hypothesis one, a number of significant correlations were found between

332   FF experience/behaviour and measures of mental health (see Table 2), though several had r

333   values below .20 and therefore would be considered 'very weak' (Evans, 1996). Of the

334   others, the results found the following: i) weak, positive correlations between FF Time

335   Playing and low mood, anxiety, and problematic behaviour; ii) weak, positive correlations

336   between FF Time Researching and low mood, anxiety, functional impairment, and

337   problematic behaviour; and, iii) weak, positive correlations between FF Time Thinking and

338   low mood, anxiety, functional impairment, and problematic behaviour. In sum, increases in

339   FF behaviours were correlated with increases (i.e., poorer) mental health scores, though

340   correlations between FF experience and mental health were either non-significant or very

341   weak.

342   **Effect of FF Experience/Behaviour**

343   *FF Experience:* One-way ANOVAs revealed statistically significant differences in

344   low mood ($F(2,1986) = 5.12$, $p = 0.01$, $d = 0.01$) and anxiety ($F(2,1986) = 7.26$, $p < 0.01$, $d =$

345   0.01) for FF Experience (see Figure 1). Bonferroni post-hoc tests revealed where these

346   significant differences lay and are denoted by subscripts in Table 3, along with means and

347   standard deviations (this is also applied to all subsequent one-way ANOVA results). In

348   general, it was found that more experience in FF led to lower scores (indicating better mood

349   and less anxiety towards FF).

350   *FF Leagues:* In relation to hypothesis 2a, the one-way ANOVAs revealed statistically

351   significant differences in low mood ($F(2,1981) = 7.32$, $p < 0.01$, $d = 0.01$), anxiety

352   ($F(2,1981) = 6.87$, $p < 0.01$, $d = 0.01$), functional impairment ($F(2,1960) = 9.61$, $p < 0.01$, $d =$

353   0.01) and problematic behaviour ($F(2,1978) = 22.10$, $p < 0.01$, $d = 0.02$) for FF Leagues. In

354   general, it was found that playing in more FF leagues led to higher scores (indicating lower

355   mood and worse anxiety, functional impairment, and problematic behaviour towards FF).

356   *FF Time Playing:* In relation to hypothesis 2b, the one-way ANOVAs revealed

357   statistically significant differences in low mood ($F(3,1972) = 44.20$, $p < 0.01$, $d = 0.06$),

358   anxiety ($F(3,1972) = 40.63$, $p < 0.01$, $d = 0.06$), functional impairment ($F(3,1951) = 23.39$, p

359   < 0.01, $d = 0.03$) and problematic behaviour ($F(3,1969) = 75.00$, $p < 0.01$, $d = 0.10$) for FF

360   Time Playing. In general, it was found that more time spent playing FF led to higher scores

361   (indicating lower mood and worse anxiety, functional impairment, and problematic behaviour

362   towards FF).

363   *FF Time Researching:* In relation to hypothesis 2c, the one-way ANOVAs revealed

364   statistically significant differences in low mood ($F(3,1984) = 51.72$, $p < 0.01$, $d = 0.07$),

365   anxiety ($F(3,1984) = 39.98$, $p < 0.01$, $d = 0.06$), functional impairment ($F(3,1963) = 48.99$, p

366   < 0.01, $d = 0.07$) and problematic behaviour ($F(3,1981) = 101.57$, $p < 0.01$, $d = 0.13$) for FF

367   Time Researching. In general, it was found that more time spent researching FF led to higher

368   scores (indicating lower mood and worse anxiety, functional impairment, and problematic

369   behaviour towards FF).

370   *FF Time Thinking:* In relation to hypothesis 2d, the one-way ANOVAs revealed

371   statistically significant differences in low mood ($F(3,1944) = 90.01$, $p < 0.01$, $d = 0.12$),

372   anxiety ($F(3,1944) = 70.78$, $p < 0.01$, $d = 0.10$), functional impairment ($F(3,1923) = 50.75$, p

373   < 0.01, $d = 0.07$) and problematic behaviour ($F(3,1941) = 139.08$, $p < 0.01$, $d = 0.18$) for FF

374   Time Thinking. In general, it was found that more time spent thinking about FF led to higher

375   scores (indicating lower mood and worse anxiety, functional impairment, and problematic

376   behaviour towards FF). Figure 2 shows the mean responses for low mood and anxiety for

377   each group.

378

379   **Discussion**

380   The present study aimed to explore the mental health of individuals who play FF, and

381   the impact that experience and behaviour can have on these measures. Specifically, adapted

382   versions of the PHQ-9, GAD-7, WSAS, and POGQ-S were used to investigate low mood,

383   anxiety, functional impairment, and problematic behaviour towards FF. The results revealed

384   that high experience (i.e., more than 10 years of playing FF) produced significantly lower

385   scores for low mood and anxiety, indicating better mental health. In terms of FF behaviours,

386   individuals in the highest groups for engagement (many leagues played, over 45 minutes

387   playing, over 60 minutes researching, and over 120 minutes thinking about FF per day)

388   produced significantly higher scores for low mood, anxiety, functional impairment, and

389   problematic behaviour (indicating poorer mental health). Within this, it is important to note

390   that all effect sizes were below $d = 0.19$. Such values are generally regarded as indicating

391   very small magnitudes based on the global conventions rendered by Cohen's (1988) seminal

392   work. However, Cohen also recommended that effect size interpretations should be derived

393   by comparisons with previous studies in the specific area of the research, and therefore more

394   work is needed before definitive conclusions can be made about the size of the effects found

395   in the present study (Schäfer & Schwarz, 2019).

396   The findings partially support hypothesis one in that significant, positive correlations

397   were found between FF engagement (in terms of Time Playing, Researching, and Thinking)

398   and the four measures of mental health. However, unexpectedly, the correlations between FF

399   Leagues and mental health, though significant, were all very weak ($r = .10$ to $.15$), whilst the

400   correlations between FF Experience and mental health were either negative and very weak

401   (low mood and anxiety) or non-significant (functional impairment and problematic

402   behaviour). All four subcomponents of hypothesis two were supported by the results, with the

403   groups reflecting highest engagement in FF (many leagues and high time spent playing,

404   researching, and thinking) having significantly poorer mental health scores than the groups

405   reflecting lower engagement.

406   Given that this is the first study to explore mental health in FF players, it was felt

407   beneficial to also report the descriptive statistics of low mood, anxiety, and functional

408   impairment as categorised according to the guidelines used in clinical settings. This will

409   allow future studies to have a 'baseline' rate for comparison. In general, only a minority of

410   players experienced mental health concerns towards FF (24.6% with at least mild low mood,

411   19.6% with at least mild anxiety, and 13.6% with at least a significant functional

412   impairment). It is important to remember, however, that these questionnaires were amended

413   to address FF, and therefore do not reflect prevalence of these mental health disorders

414   themselves, but rather, the feelings of low mood, anxiety, and functional impairment *towards*

415   *the FF game only*. Such a distinction is important, as it may be that these feelings are

416   transient and only experienced whilst (or not long after/before) playing FF. Future research

417   should look to examine whether FF has a more holistic impact on mental health in everyday

418   life. Irrespective, the low numbers reported here are perhaps encouraging given some of the

419   anecdotal reports frequently seen online (Fantasy Football Hub, 2021; Jones, 2020) and are in

420   line with growing evidence from video game research which suggests a positive, rather than

421   negative, impact on wellbeing (see Kowal et al., 2021, and Pine et al., 2020, for recent

422   reviews). The findings of this work, therefore, suggest that potential risk factors linked to

423   poor mental health – such as a lack of control over the outcome of events or an uncertainty

424   over attributing successes and failures – do not apply to FF, or are compensated for by the

425   positive characteristics such as the inability to "binge" play the game.

426   The finding that more years of experience in FF led to better mental health scores was

427   initially surprising, particularly as research within the video game literature has suggested the

428   opposite to be the case (Bringula, Lugtu, & Aviles, 2015). However, there are a number of

429   reasons that may explain why experience alleviates mental health issues. First, it could

430   simply be a case of the survivorship effect. That is, only individuals who are able to manage

431   their mental health appropriately will continue to play the game for such a long period;

432   individuals who are unable to will simply stop playing and therefore would not be

433   represented in the present study. Second, it may be that experienced players have developed

434   various coping mechanisms to help them deal with the highs and lows of FF. For instance,

435   acceptance and psychological distancing may be two useful techniques to cope with

436   unsuccessful outcomes in FF (Dowsett, 2020). Third, it may be that the novelty of the game

437   has "worn off" after a number of years of playing. This may not necessarily manifest itself

438   behaviourally (correlations between FF experience and FF behaviours were negative, but

439   very weak), but rather, mentally, such that the individual develops an emotional "numbness"

440   to the effects of the game. These hypotheses warrant closer investigation.

441   Though it is not surprising that low mood, anxiety, functional impairment, and

442   problematic behaviour all worsened with increased engagement in FF, the findings are still

443   notable. To provide some context for the extent to which mental health scores increased with

444   more engagement, whilst 'only' 24.6% of all participants were classified as having at least

445   mild low mood towards FF, when examining only the high FF Time Thinking group (those

446   who thought about FF for more than 120 minutes per day), this number rises to 44.0%.

447   Similarly, those with at least mild anxiety towards FF rises from 19.6% in the whole sample,

448   to 34.3% for the high FF Time Thinking group, and for at least significant functional

449   impairment, from 13.6% to 37.4%. So whilst one in five FF players are likely to have at least

450   mild anxiety towards the game, if that individual has what the present study categorises as

451   high levels of engagement, then that likelihood increases to just one in three. These findings

452   are in accordance with much of the video game literature (Andreassen et al., 2016; Halbrook

453   et al., 2019; Jones et al., 2014) and highlight the importance of managing the amount of time

454   dedicated to various FF activities.

455   Whilst incidence of low mood, anxiety, functional impairment, and problematic

456   behaviour may be low amongst FF players – even those with the highest engagement – it is

457   nevertheless a critically important topic for that minority who do experience negative mental

458   health towards the game. It is unclear whether these issues persist outside of FF, but it is

459   possible, and as such, awareness of the problem and receiving support are essential in

460   ensuring that this activity continues to serve its primary purpose of entertaining people. These

461   issues take on added importance with the growing link between FF and gambling. Columb et

462   al. (2020) reported that over 50% of FF players had gambled on the game in the previous 12

463   months, and the line between FF and gambling continues to be blurred with the introduction

464   of 'daily fantasy sports' which allows users to compete and win money over much shorter

465   periods (often a single day). Given that problematic gambling is associated with numerous

466   detrimental outcomes ranging from poor mental health (Churchill & Farrell, 2018) to suicide

467   (Wardle & McManus, 2021), it is essential that the findings from the present study are used

468   to identify at-risk individuals (i.e., those engaging to excessive levels in various FF activities)

469   and raise awareness of the potential consequences. Internet-interventions, particularly

470   cognitive behaviour therapy interventions, have shown promise as an effective way to reduce

471   gambling (Giroux et al., 2017 – systematic review; van der Maas et al., 2019 – scoping

472   review) and for treating mental health (Calbring et al., 2017). These interventions should be

473   made easily accessible to individuals highlighted as at-risk for both poor mental health and

474   problematic gambling associated with FF.

475   Another potential consideration for future research is the role of social media in FF.

476   Despite the game being played through FF-dedicated applications, for many, the majority of

477   time spent engaging in FF discussions is on social media platforms. Within this, there are a

478   myriad of complex cognitive and social psychological processes that may negatively impact

479   one's mental health, for example, fear of missing out (FoMO). FoMO is the "pervasive

480   apprehension that others might have rewarding experiences from which one is absent"

481   (Przybylski, Murayama, DeHaan & Gladwell, 2013, p. 1843), with over 70% of adults

482   admitting to feelings of 'missing out' (JWTIntellgience, 2012, as cited in, Abel, Buff, & Burr,

483   2016). Research has demonstrated that FoMO at its worst can lead to degradation of

484   psychological well-being and a 'tethered sense of self' (Turkle, 2011), and this appears to be

485   intensified by social media (Abel et al., 2016). If social media in relation to FF has the ability

486   to exacerbate feelings of anxiety and missing out, it may be that social media should be

487   avoided wherever possible for individuals prone to poor underlying mental health.

488   Alternatively, it could be that social media in relation to FF helps to satisfy the individual's

489   need to belong and form interpersonal relationships (Maslow, 1943), or even enable further

490   escape from difficulties in other aspects of their life (Billings & Ruihley, 2013), acting as a

491   positive influence for mental health. The vital consideration here is whether there is a

492   significant improvement or reduction in the user's mental health when participating in FF

493   discussions on social media, above and beyond only direct participation in FF.

494   A potential limitation with regard to the study is the time at which the data were

495   collected. Participants completed the questionnaire during February and March of 2021, at

496   which point there was the global COVID-19 pandemic ongoing, and many countries

497   (including the UK, where 51.6% of the sample were residing) were under national

498   lockdowns. Whilst the wording of the questions instructed participants to respond *in relation*

499   *to FF,* as opposed to life in general, it is certainly conceivable that some may not have

500   adhered to that distinction. Given that the COVID-19 pandemic has seen significant increases

501   in anxiety, depression, and stress across the world (Xiong et al. 2020), any misinterpretations

502   may result in a more negative reflection of FF than would be the case had the data been

503   collected under 'normal' circumstances. Alternatively, it is possible that the pandemic may

504   have led to more favourable opinions. Research has regularly reported 'escapism' to be an

505   important motivator in fantasy sports participation (Farquhar & Meeds, 2007; Spinda &

506   Haridakis, 2008), and this may be more relevant during difficult life circumstances. As such,

507   it may be that individuals report more positive attitudes towards FF than they otherwise

508   would. A replication study outside of a global pandemic is warranted.

509   Irrespective of COVID-19, the timing of the questionnaire mid-way through the

510   football season may also have impacted participants' responses. If an individual was having a

511   particularly successful or unsuccessful season (or week in which they completed the

512   questionnaire) then it could be that the feelings of low mood and anxiety, or perceptions of

513   functional impairment and problematic behaviour, were reported differently than if the

514   questionnaire were completed out of season. Finally, it is important to also consider the

515   limitations commonly associated with the questionnaire-based research method. Most

516   pertinent to the current study is that mental health is a sensitive topic area and, as such, it is

517   possible that some participants may have been inclined towards socially desirable responses

518   or extreme response styles. This may be especially applicable given the niche nature of FF

519   and how it is often associated with the "nerd" or "geek" subculture (Baruca & Ulusoy, 2017).

520   However, with the whole protocol being carried out online with no face-to-face interaction,

521   and with regular instructions reminding participants of their anonymity, it is hoped that these

522   biases may have been kept to a minimum. This online approach does, though, create a further

523   potential issue in that it may have increased the possibility of the study experiencing

524   sampling bias, with only those FF players who regularly use Twitter or visit

525   FantasyFootballScout.com likely to have been aware of the research.

526   Future research should look to take a qualitative approach to explore this topic in

527   more depth. Interviews can provide richer data than quantitative approaches such as that of

528   the current study and, given the lack of existing research in the area, may elucidate new ideas

529   and theories that would otherwise not have been considered. Indeed, with mental health often

530   seen as a sensitive subject, a more intimate, interview approach may actually be preferential

531   (Morrison & Stomski, 2015). Exploring whether baseline mental health and major life events

532   make individuals more susceptible to the negative impact of FF may be valuable, whilst

533   longitudinal studies could also be utilized to investigate potential changes in mood and

534   anxiety towards FF over time. In particular, looking across the course of one season and

535   examining whether factors such as perceived locus of control, social support, and in-game

536   success effects any changes could be important in the long-term with regard to the

537   development of interventions for at-risk players.

538   The present study has provided a first, exploratory step into the mental health of

539   individuals who play FF. The results have revealed that whilst incidence of low mood,

540   anxiety, functional impairment, and problematic behaviour may be low overall (13.6% to

541   24.6%), when constrained to only those with high levels of engagement in FF, these numbers

542   rise considerably (34.3% to 43.0%). Indeed, individuals who play in more than five FF

543   leagues, or who: i) spend longer than 45 minutes on FF apps/sites; ii) longer than 60 minutes

544   researching FF; or, iii) longer than 120 minutes thinking about FF, report significantly poor

545   mental health scores than those who engage less. This is an important finding and provides

546   justification for the idea that more should be done to monitor the amount of time being

547   dedicated to FF by individuals, both by the game-makers themselves and by the players.

548   Interestingly, greater experience in FF led to reduced (that is, better) mental health scores.

549   Implications with regard to mental health awareness are discussed, alongside ideas for future

550   research that includes replicating the findings outside of a global pandemic, the utilisation of

551   interview approaches, and exploring the reasons for the results regarding FF Experience.

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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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561   *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**

562   *Note.* * indicates $p < .05$, ** indicates $p < .01$. *M* = mean, *SD* = standard deviation. Low mood, anxiety, functional impairment, and problematic
563   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.

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

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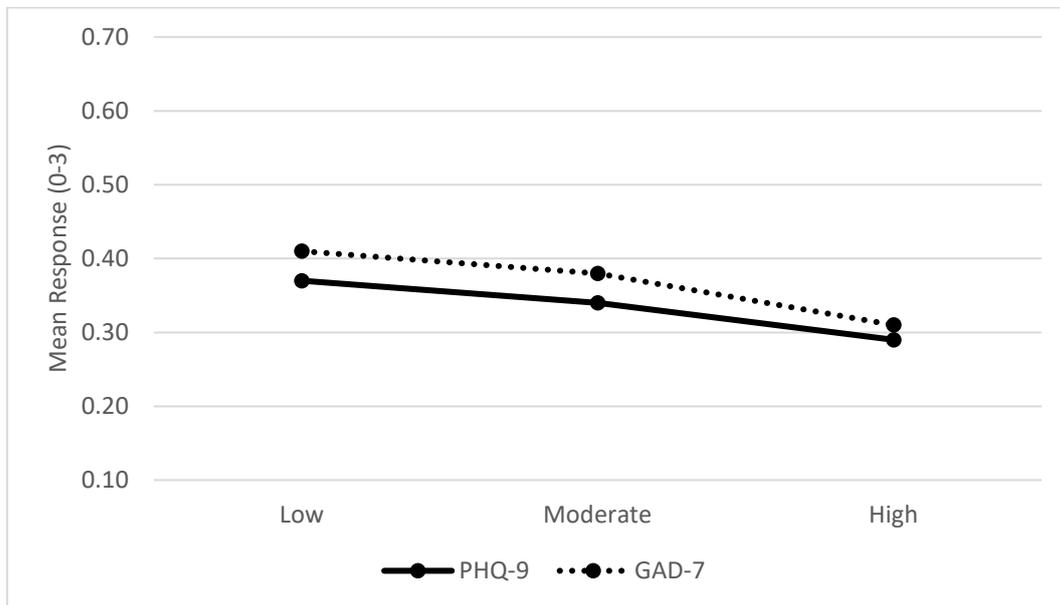
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578   *Figure 2.* Low Mood (PHQ-9) and Anxiety (GAD-7) towrds FF as a function of FF Time

579   Thinking
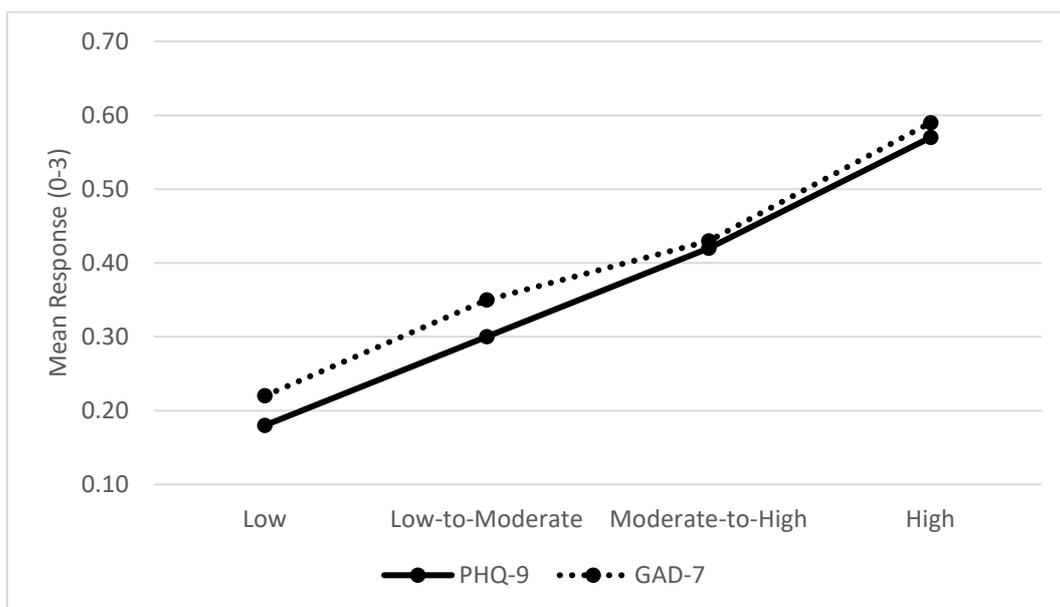
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807   **Appendix**

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?

<u>Section C – Multidimensional Emotion Questionnaire (MEQ) – Adapted to FF</u>

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.