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Moderating role of Social Connectedness in the Relationship between Fear of Missing Out and Problem Gambling Vulnerability among Adolescent Tourists: Implication for Gambling harm Prevention.

Larry O. Awo[1,3] & Aaron A. Agbo[2]
[1]*School of General Studies,Federal Polytechnic of Oil and Gas, Bonny, Rivers state, Nigeria.*
[2]*Department of Psychology, University of Nigeria, Nsukka 410001, Enugu state, Nigeria.*
[3]*Centre of Excellence in Responsible Gaming (CERG), University of Gibraltar, Europa point Campus, GX111AA, Gibraltar.*

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ABSTRACT

Problem gambling (PG) prevalence has continued to increase in Nigeria and especially among the youth and young adult population. Adolescents are the most at-risk population for PG and their vulnerability appears to increase as their exposure to gambling opportunities such as fun and leisure settings including visits to parks where card and dice games are common. This survey study explored whether social connectedness moderates the association between fear of missing out (FoMO) and problem gambling vulnerability of adolescent tourists. Data were collected from adolescent tourists (N= 615; age range = 15-19 years; M = 17.02, SD = 2.42) who visited a Nature Park in Nigeria between June and December 2023. The participants were made up of male (n = 564(91.71%)) and female (n = 51(8.29%)) The Fear of missing out scale, social connectedness scale and the problem gambling severity index (PGSI) were the instruments used in measuring FoMO, social connectedness, and vulnerability to PG respectively. We hypothesized that social connectedness would act as an adaptive strategy to minimize problem gambling by weakening the effect of fear of missing out on problem gambling vulnerability. The Hayes PROCESS macro analyses result showed that fear of missing out was positively associated with problem gambling vulnerability. Social connectedness was negatively associated with problem gambling vulnerability, and further weakened the positive association between FoMO and problem gambling vulnerability such that, for tourists who are high on social connectedness, the FoMO-problem gambling vulnerability association was negative while for those with low social connectedness, the

Introduction

Problem gamblingrefers to an excessive gambling behaviour that creates negative consequences for the gambler, others in his/her social network, and for the community (Blaszczynski & Nower, 2002). It portends a growing concern for mental healthcare systems globally (Molander et al., 2021; Calado & Griffiths, 2016) and it is commonly framed as a public health issue by many countries and researchers (Wang & Bellringer, 2022; Hofmarcher et al., 2020; Price et al., 2021; David et al., 2020). However, there is lack of theoretical consensus to explain why individuals differ in rates of problem gambling (Wang & Bellringer, 2022). Cognitive theorists suggest that problem gambling is caused by erroneous and faulty beliefs in personal skills in randomness of gambling winnings (Raylu & Oei, 2004).

Behaviour theorists consider problem gambling as learnt behaviour that is reinforced by winnings (Victorian Responsible Gambling Foundation; 2012). The pathways model suggests that problem gambling emanates from a combination of personal, social, and situational factors, and that problem gambling individuals can be grouped into 3 classes i) behaviourally conditioned, ii) emotionally vulnerable and iii) antisocial impulsivist (Blaszczynski& Nower, 2002). Recently, the 5th Edition of the Diagnostic Statistical Manual (DSM-V; APA, 2013; Nicholson et al., 2019) classified problem gambling as a substance-related disorder and addiction. This classification suggests that social, mental, and medical healthcare professionals begin to look at problem gambling in the same lens as substance related addictions (Abe et al., 2021; Awo, 2022).

Tourism and gambling

Tourism is significantly linked to the economic development of destination areas and cities (Metaxas & Folinas, 2021) and acts as an effective economic power tool (Folinas & Metaxas, 2020; Mishra et al., 2011). Gambling tourism is a special form of tourism which entices people to visit destinations with high concentrations and chances of gambling opportunities (Metaxas & Folinas, 2016). Many studies, with references to gambling risks among tourists concluded that tourism present viable opportunities for initiation and sustenance of gambling behaviour (Elhai et al., 2021; Li et al., 2021). Most tourists may feel that tourism and gambling activities are connected with positive outcomes, like stress reduction, excitement, escape and fun which are capable of sustaining gambling sessions and resulting in problem gambling

Larry O. Awo, Centre of Excellence in Responsible Gaming (CERG), University of
Email:: larry.awo@unigib.edu.gi

(Lai et al., 2020; Savolainen et al., 2019; Ma & Lai, 2016).

The most distinctive feature of tourism is the social dimension which includes socializing, relationships, and building networks (Przybylski et al., 2013; Balta et al., 2020). This dimension provides visitors with the opportunity to interact with others, share knowledge and to collaborate, often via games of leisure and fun such as cards, spinning wheels, roulette, and dice (Ma & Lai, 2016). Tourists and park visitors share common feeling of avoiding missing any event (fear of missing out; FoMO; Przybylski et al., 2013) and social connectedness (SC; Wan & Bellringer, 2022) with the community of tourists and the wider society. Interestingly, till date, no study has explored the direct and conditional effects of personal (FoMO) and relational (social connecteness) cues as either risk or protective factors in problem gambling vulnerability among tourists in Nigeria. The present study is aimed at bridging this knowledge gap and provide directions for problem gambling control among a community population.

FoMO and problem gambling vulnerability

FoMO is defined as "a pervasive apprehension that others might be having rewarding experiences from which one is absent" (Przybylski et al., 2013). It is a relatively stable personality make-up (Duman & Ozkara, 2019) comprised of two dimensions trait-FoMO and state-FoMO which reflects both personality disposition and cognition in which individuals fear missing out on something or an experience (Brand et al., 2019; Can & Satici, 2019). A recent study (Alt, 2018) social disposition such as FoMO may influence gaming addiction and mediate the association between healthy anxiety and gambling disorder during the Covid-19 pandemic, while other studies (Blackwell et al., 2017; Balta et al., 2018). FoMO directly predicted gambling disorder severity, and indirectly predicted gambling disorder through avoidance expectancies. This studies, however, differ from our study in that they treated FoMO majorly as a mediating factor. Furthermore, while empirical findings showed the consequences of FoMO to include problematic online behaviours and addiction (Alt, 2018; Kuss & Griffiths, 2017), other reports showed that FoMO was positively related with negative outcomes such as alcohol consumption (Riordan et al., 2018) and gambling (Li et al., 2021). Interestingly, alcohol and gambling are common features of tourism and vacation. Our study explores FoMO as a direct predictor of problem gambling severity and how the prediction would be affected (weakened)by social connectedness. This model presents a clearer insight on the nature of association between FoMO and problem gambling vulnerability. The assessment of vulnerability to problem gambling in the present study is key to understanding persons who are at risk of problem gambling.

Social Connectedness and problem gambling vulnerability

Social connectedness is defined as a state of feeling close to another people (Dias et al., 2018; Ryerson, 2017). It isthe experience of belonging to a family, community, or society (Holt-Lunstad, 2018; O'Rourke & Sidani, 2017). Being connected with others, community and society is generally recognized as an asset that protects individuals from addictions and addictive behaviours (Sirola et al., 2022; Savolainen et al., 2019). Studies regarding the relationship between social connectedness and problem gambling have yielded mixed results (Nordmyr & Forsman, 2020). While Savolainen et al. (2019) reported that social connectedness advances mental health and protects against problem gambling, other reports show that connecting with others increases an individual's chances of taking part in games that could lead to staking valuables and resources. (Hofmarcher et al., 2020; Veselka et al., 2018). Studies have shown that social connectedness diminishes the positive effects of loneliness on problem gambling (Price et al., 2021; David et al., 2020). Gambling to escape feeling of social isolation and loneliness was related with higher problem gambling scores (Nuske et al., 2016) while staying around community members was associated with lower problem gambling scores (Wang & Bellringer, 2022).

The present study

It has been reported that problem gamblers engage less in social activities (Dowling et al., 2008) and this increases chances of relapse (Jackson et al., 2013). Social connectedness a psychological sense of belonging to a group and interpersonal closeness with the society - has been reported to be capable of reducing risks of addictive behaviour development, boosting recovery from addictions, and promoting personal well-being (Nuske et al., 2016). Tourism helps to reduce daily stress and increases chances of social development and interaction such as relationship building and knowledge acquisition and expansion (Brajsa-Zganec et al., 2011). Unfortunately, the need to connect with people increases the fear of missing out from major activities while on tour. This fear propels the tourist to engage in all activities such as leisure and fun games. Extant research (Prentice & Zeng, 2018) shows strong link between playing games for leisure and fun and development of gambling among tourists.

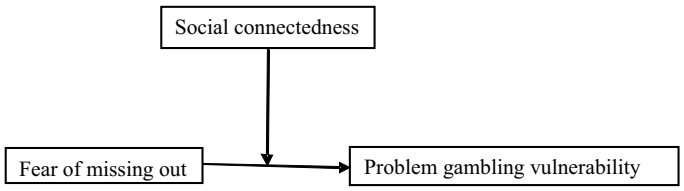
While reports of negative association between social connectedness and gambling exist in literature (Wang & Bellringer, 2022; Dowling et al., 2008), same could not be said of social connectedness and problem gambling among tourist a sample often exposed to extended gambling sessions which has high tendency to slide into problem gambling. It is unclear whether social connectedness could affect tourists' risk of problem gambling following their exposure to gambling sessions as they strive to avoid missing out of major activities during vacation. All these findings were documented on adult samples. The aim of the present study was to examine the association between adolescent tourists' fear of missing out and problem gambling vulnerability, and to explore whether social connectedness acts as a buffer to such association. Improving understanding of this association could contribute to the development of a robust model of problem gambling treatment and approaches to gambling-related harm minimization among adolescents. Thus, the study predicted

significant associations among the variables.

Hypothesis 1: Fear of missing and problem gambling vulnerability among adolescent tourists would be positively associated.

Hypothesis 2: Social connectedness and problem gambling vulnerability among adolescent tourists would be negatively associated.

Hypothesis 3: Social Connectedness would moderate the moderate the association between fear of missing out and problem gambling vulnerability among adolescent tourists.



FigIG. 1: Hypothesized relationships among the study variables

Method

Participants

This study involved 615 (male = 597, female = 18) adolescent tourists sampled at the Finima Nature Park (FNP) in Bonny Island, Rivers state, Nigeria in 2022. The ages of the respondents ranged from 15-19 (M = 17.02, SD = 2.42). Ethical approval was granted by the Federal Polytechnic of Oil and Gas Institution-Based Research Committee (FPOG-IBRC/21/0037). For inclusion criteria, respondents must meet the legal gambling age (18 years and above),had gambled in the past one month or less at the time of the study,and had a score of <3 on the problem gambling severity index (PGSI; Ferris & Wynne, 2001) indicating absence of problem gambling.

Measures

Fear of missing out was assessed using the10-item Fear of missing out scale (FoMOs; Frzybylski et al., 2013). Sample items of the FoMOs include; "I get worried when I find out my friends are having fun without me"; "It bothers me when I miss an opportunity to meet up with friends"). It is rated on a 5-point Likert scale (1 = "*Not at all true"* to 5 = "*Absolutely true"*). The scale total score ranges from 10-50 with higher scores indicating a higher level of FoMO. Przybylski et al. (2013) reported a high reliability Cronbach alpha for the scale (α = .90). In the present sample, a good internal consistency alpha (α = .87) was obtained.

Social Connectedness was assessed as individual's access to help ("Can you get help from family, neighbors or friends when you need it?"), community involvement ("Are you a member of an organized group such as a sports or religion group or another community group including those over the internet?", and do you like living in your community?"), and quality of involvement in community services ("How would you rate the overall quality of services, facilities and 'things to do' in your community?"). This assessment was based on those used in the Victorian Gambling Study (Victorian Responsible Gambling Foundation, (VRGF, 2012). Higher scores on the measure indicated greater level of social connectedness. In the present sample, the measure showed high internal consistency (α = .83).

*P*roblem gambling vulnerability was defined as high propensity to develop problem gambling as indicated by mild to moderate scores on the Problem Gambling Severity Index (PGSI; Ferris & Wynne, 2001). The PGSI is a 9-item (e. g., Have you bet more than you could afford to lose?) scale that measures the magnitude of problem gambling behaviour in the past 12 months preceding the study on a 4-point Likert scale anchored on "Never" (scored 0) to "Almost always" (scored 3) Previous research (Awo et al., 2021) showed that the PGSI was a reliable problem gambling classification tool among non-clinical samples in Nigeria (α = .81).

Procedure

Respondents were adolescent tourists and visitors at the Finima Nature Park and were sampled between February and June and December 2022. Those who volunteered to partake in the study were asked if they enjoy park games to the extent of staking on it and if they had done so before. A total of 739 adolescents affirmed to the query. They were further asked to participate in a survey aimed at understanding park games as they were administered with the fear of missing out, social connectedness, problem gambling vulnerability, as well as demographic measures. Of the 739 distributed questionnaire forms, only 615 copies (representing 83.2%)were properly filled and returned and were analyzed in the study, while 124 forms were dropped due to missing data majorly on the problem gambling vulnerability measure.

Data Analysis

Descriptive statistics (mean and standard deviation) on the demographic data, and correlations among key variables were performed using the SPSS software. Furthermore, the proposed model included direct and conditional associations (moderated effect). The procedure proposed by Hayes (2013)PROCESS macro V3.1 for SPSS was used to test the hypothesized associations. Given that the conceptual model contains a moderator, a predictor, and an outcome variable, we chose a bootstrap sample of 5,000 and a 95% confidence level, while age, and gender were treated as covariates and controlled.

Results

Table 1presents the mean (M) and standard deviation (SD), correlations among the factors; age, gender, fear of missing out, social connectedness, and problem gambling vulnerability. Significant correlations were reported among the constructs. Fear of missing out was positively correlated with problem gambling vulnerability and social connectedness. It was observed that social connectedness was negatively correlated with problem gambling vulnerability.

Table 1: Means (*M*), standard deviation (*SD*) and correlations among demographic and study variables.

Factors	*M*	*SD*	1	2	3	4	5
1 PGV	3.17	1.05	-	.18**	-.22***	-.07*	.01
2 FoMO	28.01	3.12		-	.09*	.01	.04
3 SC	8.03	3.00			-	.08*	.06*
4Age	33.17	4.05				-	.02
5Gender							-

Note: FoMO = fear of missing out; SC = social connectedness; PGV = problem gambling vulnerability; gender was coded 1 = male, and 2 = female; *p<.05; **p<.01; ***p<.01

Table 2: Hayes PROCESS moderation analysis for social connectedness on the association between fear of missing out and problem gambling vulnerability

	Model 1		*Model 2*	*Model 3*		*Model 495%CI*			
—	-	.	-	.	-	.	-	.	
(Constant)	7.12		6.31		6.22		6.18		
Age	-1.22	-.06	-1.18	-.05	-1.15	-.05	-1.13	-.04	[-2.17, 3.11]
Gender	1.06	.03	1.04	.03	1.01	.15	1.00	.11	[-1.55, 2.27]
FoMO			1.89	.32**	1.77	.30**	1.76	.29**	[2.01, 3.05]
SC					-3.18	-.50***	-3.15	-.49***	[1.50, 1.22]
FoMO*SC							-4.31	-.42**	[1.48, 2.09]
R	.17		.34		.81		.81		
R^2	.17		.47		.94		.94		
. $^2\Delta$	.13		.13		.13		.01		

Table 2 shows that PGV was positively and significantly associated FoMO (*B = .33, p < .01*). Furthermore, the association between social connectedness and PGV was negative and significant. The result showed that increases in fear of missing out scores were associated with problem gambling vulnerability scores (*B = .32, p<-.01*). Increase in social connectedness scores was associated with decreased problem gambling vulnerability scores (*B =.50, p<.001*).

Table 3: Values of the a*b path at different levels of social connectedness.

Predictors	*β*	*SE*	*95%CI*
A*b path at low SC	-.04	.02	[-.05, .09]
A*b path at Moderate SC	-.012*	.08	[-.07, .11]
A*b path at High SC	-.42**	-.142	[-.10, .16]

A*b path = unstandardized moderation effect of different levels of social connectedness on the association between fear of missing out and problematic gambling. Note: SC = social connectedness; *p<.05; **p<.01.

The moderation effect of social connectedness was tested and the unstandardized beta weights (B) and confidence intervals (CIs) for the moderator model are presented in Table 3.Social connectedness moderated the association between fear of missing out and problem gambling vulnerability. Therefore, hypothesis 3 was supported. The moderation model accounted for 57% of the variance in problem gambling vulnerability scores, $F(3, 271) = 307.53$, p<.001). The conditional effects for social connectedness were tested at 1 *SD* below the mean (low connectedness), at the mean (moderate connectedness) and 1 *SD* above the mean (high connectedness) (*B = -.42, p<.01*).

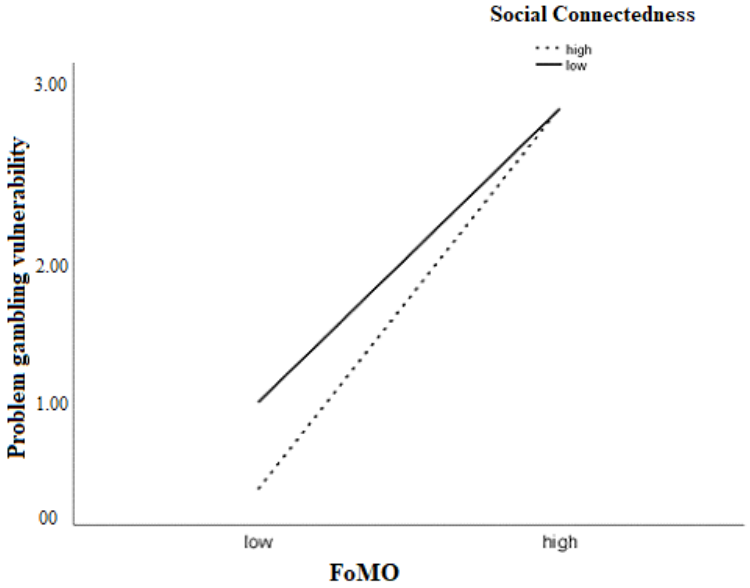


Fig. 2: Moderation effect of social connectedness on the association between FoMO and problem gambling vulnerability. Note: FoMO = fear of missing out.

Figure 2 illustrates the effect of fear of missing out on problem gambling vulnerability via social connectedness as a moderator. The association between fear of missing out and problem gambling vulnerability was strong and positive at low social connectedness and average at moderate social connectedness. Interestingly, the association between fear of missing out and problem gambling vulnerability was weak at high social connectedness.

Discussion

The major aim of this study was to explore whether social connectedness would explain the association between fear of missing out and problem gambling vulnerability of adolescent tourists who visited a nature park in Nigeria. Firstly, it was hypothesized that **f**ear of missing and problem gambling vulnerability would be positively associated (Hypothesis 1). This prediction was supported by the finding which revealed a positive association between fear of missing out and problem gambling vulnerability. This finding confirms past reports (Can & Stici, 2019; Blackwell et al., 2017; Przybylski et al., 2013) that fear of missing was a risk factor for addiction and addictive behaviour gambling and potential problem gambling**.** This finding further supports past studies (Awo et al.**,** 2022; Jackson et al., 2013; Browne et al., 2020) and peer influence as explanatory factors in the initiation of

problem gambling among social gamblers.

The result further revealed that social connectedness was negatively associated with problem gambling vulnerability. This finding confirms our second prediction that social connectedness and problem gambling vulnerability among adolescent tourists would be negatively associated. This finding is consistent with extant research (Holt-Lunstad, 2018; Sirola et al., 2022; Wang & Bellringer, 2022) showing that physical and social interaction with peers and friends reduces gambling participation and the development of problem gambling. This emphasizes being connected with others, peers and community as an asset that protects individuals from addictions and addictive behaviours (Savolainen et al., 2019). The present finding, however failed to support research evidencethat connecting with others increases an individual's chances of participating in leisure games such as card and dice which had high tendency to result in addiction and resource losses (Hofmarcher et al., 2020; Veselka et al., 2018).

The central goal of the present research was to test the moderating role of social connectedness on the relationship between fear of missing out and problem gambling vulnerability among adolescents. Interestingly, our prediction that social connectedness wouldmoderate the association between fear of missing out and problem gambling vulnerability was confirmed. Specifically, social connectedness was negatively associated with problem gambling vulnerability and this negative influence further dissipated/weakened the influence of fear of missing on problem gambling vulnerability. This finding provides support to extant research reports (Wang & Bellringer, 2022; David et al., 2020) that increased social connectedness scores was associated with lowered problem gambling scores. The present finding revealed that when adolescent tourists are connected with their social environment, they are less vulnerable to problem gambling despite their willingness to catch every event that go on around them. One explanation for this may be that social connectedness provides same kind of fun and leisure that social gambling does provide. That is, staying connected and involving in community activities tend to deter gambling participation as reported previously (Hofmarcher et al., 2020; Price et al., 2021).

An important implication from the present study is that the interaction effect found for fear of missing out and social connectedness suggests that social ties could provide insight in ameliorating problem gambling among tourists who have heightened fear of missing out. Fear of missing out predicted increased problem gambling vulnerability, but this prediction was upturned when social connectedness increased irrespective of non-reduction in fear of missing out scores. It could, thus, be beneficial to include strategies that encourage participation in social activities and connectedness in problem gambling treatment plans. Also, the hospitality and tourism industry should encourage social and interactive activities among tourists to minimize the effects personal feeling of missing out of key activities among such as leisure and fun games that often involve staking resources and valuables. The impacts of such social connectedness can have profound effects on gambling and problem gambling aversion.

Limitations of the study and Directions for Future Research

The present research has some limitations. The availability sampling method adopted could limit applicability of the findings. The research was conducted in Nigeria among tourists with its unique economic challenges that do not permit tourism and visit to parks by those in the low-economic class. Thus, the present findings may not apply beyond the middle and top class who could afford tourist visits and vacation. Ironically, problem gambling has not been reported among this class (Awo et al., 2022). Interestingly, this also provides potential for future research that could replicate, refute, or expand the present results by including socio-economic indices as a factor of interest. Despite these limitations, the study found that fear of missing out influences problem gambling vulnerability through social connectedness. This implies that societies with cultures that promote community interactions and connectedness would have less reports of problem gambling. Future studies would explore what type of social connection best discourages gambling.

Conclusion

This study examined the moderating role of social connectedness in the relationship between fear of missing out and problem gambling vulnerability among adolescents. We found the association between fear of missing out and problem gambling vulnerability weakened in the presence of high social connectedness, while the association strengthened when social connectedness was low. We, thus, recommend the inclusion of social connectedness in gambling treatment packages for adolescents.

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