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ORIGINAL ARTICLE

Attachment and Gambling Severity Behaviors Among Regular Gamblers: A Path Modeling Analysis Exploring the Role of Alexithymia, Dissociation, and Impulsivity

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Abstract
Gambling disorder is viewed by many as a behavioral addiction involving significant functional impairment and a deterioration in the quality of life. The aim of the present study was to explore the factors that can influence problematic gambling by specifically focusing on the role of attachment, alexithymia, dissociation, and impulsivity. The sample comprised 368 regular gamblers (59% males, 41% females; M_{age}=33.5 years). They completed an online survey consisting of the South Oaks Gambling Screen, Relationship Questionnaire, Twenty-Items Toronto Alexithymia Scale, Dissociative Experiences Scale-II, and Barratt Impulsiveness Scale–11. Path modeling was performed to analyze the collected data. Results showed a significant multiple mediation model: CMIN/DF=4.447, GFI=0.984, NFI=0.964, CFI=0.971, SRMR=0.046. Fearful and preoccupied attachment patterns showed significant and positive associations with problematic gambling, and which were mediated by alexithymia, dissociation, and impulsivity. These results provide useful information to orient clinical practice and preventive intervention.

Keywords Gambling disorder · Problematic gambling · Insecure attachment · Emotional dysregulation · Dissociation · Impulsivity

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Introduction

Given the growing prevalence, availability, and accessibility of gambling, increasing research and clinical attention has been placed on examining the problematic patterns of this behavior (Abbott, 2020; Black & Shaw, 2019). In this regard, the American Psychiatric Association (APA, 2013, 2022) describes gambling disorder as a problematic gambling behavior that manifests itself persistently and recurrently, generating significant and pervasive impairment or distress. It is conceptualized as a behavioral addiction because it shares neurobiological correlates, vulnerability factors, and phenomenological components (such as tolerance, withdrawal, and craving) with substance use addictions (APA, 2013, 2022; Petry et al., 2014; Potenza 2014). Furthermore, gambling disorder has been associated with significant negative outcomes such as depression (Rogier et al., 2021), anxiety (Jauregui et al., 2016), familial and interpersonal problems (Shaw et al., 2007), financial difficulties (Rizeanu, 2015), health problems (Griffiths & Calado, 2022), and a high suicide rate (Armoon et al., 2023; Suissa, 2011). In light of these negative consequences for individuals' psychosocial health, the attention of the scientific community on this phenomenon and the study of its antecedents is constantly growing which provides useful evidence to guide clinical practice and preventive activity (see Dowling et al., 2017] for a review).

Among the different theoretical perspectives for the explanation of addictions (West & Brown, 2013), self-regulation theory has had many applications for gambling disorder (Brown, 1998; Padykula & Conklin, 2010; Rogier & Velotti, 2018), where the behaviour is posited as a dysfunctional attempt at external regulation of dysregulated internal states (Rogier & Velotti, 2018). Within this framework, attachment is a factor of great importance for the onset of gambling disorder (Padykula & Conklin, 2010) because it represents the intersubjective context within which regulatory capacities are developed (Bowlby, 1969; Schore & Schore, 2008). Indeed, previous research has highlighted that insecure attachment styles are positively associated with gambling disorder (Terrone et al., 2021), in addition to other behavioral addictions such as gaming addiction (Sung et al., 2020), compulsive online shopping (Topino et al., 2022), and sexual addiction (Gilliland et al., 2015), as well as alcohol abuse and substance use disorder (Schindler, 2019; Wyrzykowska et al., 2014). Furthermore, Bartholomew (1990; Bartholomew & Horowitz, 1991) conceptualized a model for the study of adult attachment by further detailing insecure styles comprising (i) fearful attachment (high anxiety and strong avoidance; positive perception of the other and negative perception of the self), (ii) preoccupied attachment (high anxiety and low avoidance; negative perception of both the other and the self), (iii) dismissing attachment (low anxiety and high avoidance; negative perception of the other and positive of the self), and (iv) secure attachment (low anxiety and low avoidance; positive perception of both the other and the self). This model has been used effectively in addiction research, highlighting the important role of fearful and preoccupied patterns in contributing to several behavioral addictions, such as love addiction (Gori et al., 2023a) and social media addiction (Gori et al., 2023b). With regards to problematic gambling, evidence on these associations is still preliminary (e.g., Pace et al., 2013) and needs further investigation.

Overall, attachment plays a central role in the development of adequate regulatory skills (Pascuzzo et al., 2015) and among individuals with gambling disorder, it has been found that insecure attachment is significantly and positively related to alexithymia (Gori et al., 2022a). Alexithymia consists of a deficit in emotion processing and regulation (Sifneos,

1972; (Bagby et al., 1994a, b) and, in line with self-regulation theory (Brown, 1998), it has been found to be an important influence in both the risk of development ((Gori et al., 2023c) and the level of severity (Gori et al. al., 2023d) of many addictions. Empirical evidence has also supported the centrality of this variable in gambling disorder (see Marchetti et al., 2019] for a review). For example, previous research has reported significantly higher levels of alexithymia among those from clinical samples compared to healthy controls (Maniaci et al., 2017), and highlighted that alexithymia is a significant mediating variable in the relationship between attachment and problematic gambling (Estévez et al., 2021). Furthermore, alexithymia has been found to be significantly and positively related to other central factors in gambling, such as dissociation and impulsivity (Topino et al., 2021; (Gori et al., 2016, 2023c).

Dissociation is not necessarily a pathological phenomenon, and can be expressed on a continuum where the most serious extreme may result in a pathological alteration of personality or identity (Loewenstein, 2022). With regards to gambling disorder, dissociation may represent a mechanism aimed at modulating the internal dysregulated affects through the problematic behavior (see Rogier et al., 2021] for a review), according to self-regulation theory (Brown, 1998). Furthermore, scientific research supports this relationship (see Schluter & Hodgins [2019] for a review). For example, individuals with gambling disorder frequently report higher levels of dissociation than in community samples (McCormick et al., 2012) and, in comparing clinical groups with different levels of severity, dissociation is significantly higher among those with more symptoms (Gori et al., 2016; Griffiths et al., 2006). Consistently, dissociation has been found to be predictive of symptom severity (Imperatori et al., 2017). Finally, evidence suggests that the dissociative features may trigger the impulsivity dimension characteristic of problematic gambling among individuals with an addiction (Craparo et al., 2015).

Impulsivity refers a tendency to rapidly react to internal or external stimuli, without considering the negative consequences (Brewer & Potenza, 2008; Moeller et al., 2001). It has been considered a core factor in problematic gambling (see Ioannidis et al. (2019) for a meta-analysis), showing a significant role both in favoring its maintenance (Gori et al., 2022a) and determining its severity (Gori et al., 2023d). In line with the self-regulation theory (Brown, 1998), the tendency to act rashly when experiencing emotional dysregulated states may result in a loss of control in gambling (Rogier & Velotti, 2018). Indeed, evidence has shown that clinical samples report significantly higher levels of impulsivity than healthy controls in all dimensions that characterize this variable (Kräplin et al., 2014). Furthermore, the association between dissociation and gambling disorder has been highlighted both longitudinally (Dussault et al., 2011) and cross-sectionally (Hodgins & Holub, 2015).

Based on the aforementioned theoretical and empirical framework, the aim of the present study was to explore the association between adult attachment and problematic gambling among a sample of regular gamblers, and explore the role of alexithymia, dissociation, and impulsivity in this relationship. Previously, the studies that have considered the attachment model conceptualized by Bartholomew (1990; Bartholomew & Horowitz, 1991) in this area are scarce and, in some cases, focus on adolescent samples (e.g., Pace et al., 2013). Moreover, despite the evidence supporting the relationships of all the aforementioned variables, to date, there has been no research exploring their interactions concurrently among a sample of regular gamblers. Therefore, a multiple mediation model was tested, by hypothesizing that:

H_1: Fearful and preoccupied attachment patterns would be significantly and positively associated with problematic gambling;

H_2: Fearful and preoccupied attachment patterns would be significantly and positively associated with alexithymia;

H_3: Alexithymia would be significantly and positively associated with problematic gambling, dissociation, and impulsivity;

H_4: Dissociation would be significantly and positively associated with impulsivity and problematic gambling;

H_5: Impulsivity would be significantly and positively associated with problematic gambling;

H_6: Alexithymia, dissociation, and impulsivity would mediate the relationship between fearful and preoccupied attachment patterns and problematic gambling.

Method

Participants and Procedure

The study comprised a sample of 368 individuals (59% males, 41% females) who regularly engaged in gambling behaviors (monthly or more). As shown in Table 1, their mean age was 33.5 years ($SD = 13.67$) and they were predominantly single (63%), employed (42%) and had a high school diploma (44%). They were recruited through online snowball sampling. A link to the survey hosted in the *Google Forms* platform was sent out to online discussion pages concerning various gambling activities on *Facebook*. Before data collection, each participant was informed about the general aim of the research, the anonymous and confidential processing of data for research purposes, and the possibility of leaving the study at any time. Furthermore, they provided informed consent electronically. The protocol of the study was approved by the last author's institutional Ethical Committee.

Measures

South Oaks Gambling Screen (SOGS): The SOGS (Lesieur & Blume, 1987; Italian version: Guerreschi & Gander 2000) is a 16-item self-report scale and was used to assess levels of problematic gambling. Items (e.g., *"Did you ever gamble more than you intended?"*) are rated with different response formats including a three-point scale ("*not at all*"; "*Less than once a week*"; "*Once a week or more*"), multiple-choice, or yes/no. The total score results in one of three types of gambling: absence of gambling problems (scores from 0 to 2), being at-risk for problematic gambling (scores from 3 to 4), and problematic gambling (scores of 5 or more). In the present study, the Italian SOGS showed excellent internal consistency ($\alpha = 0.93$).

Relationships Questionnaire (RQ): The RQ (Bartholomew & Horowitz, 1991; Italian version: Carli 1995) is a 4-item self-report scale and was used to assess adult attachment styles comprising secure, dismissing, preoccupied, and fearful attachment patterns. Items (e.g., *"It is easy for me to become emotionally close to others. I am comfortable depending on them and having them depend on me. I don't worry about being alone or having others not accept me"*) are rated on a seven-point Likert scale from 1 ("*It does not describe me at*

Table 1 Demographic characteristics of the sample ($N=368$)

Characteristics		$M \pm SD$	n	%
Age (years)		33.5 ± 13.67		
Sex				
	Females		151	41.0
	Males		217	59.0
Marital Status				
	Single		233	63.3
	Married		65	17.7
	Cohabiting		46	12.5
	Separated		8	2.2
	Divorced		11	3.0
	Widowed		5	1.4
Education				
	Middle School diploma		31	8.4
	High School diploma		162	44.0
	University degree		107	29.1
	Master's degree		49	13.3
	Post-lauream specialization		19	5.2
Occupation				
	Student		88	23.9
	Working student		57	15.5
	Artisan		17	4.6
	Employee		154	41.8
	Entrepreneur		10	2.7
	Freelance		8	2.2
	Homemaker		4	1.1
	Trader		2	0.5
	Unemployed		8	2.2
	Retired			
Levels of problematic gambling (South Oaks Gambling Screen)				
	Absence of gambling problems		257	69.8
	At risk for problematic gambling		46	12.5
	Problematic gambling		65	17.7

all") to 7 ("*It very much describes me*"). In the present study, since the four attachment styles are assessed with a single item, the alpha coefficient of the Italian RQ cannot be calculated.

Twenty-Items Toronto Alexithymia Scale (TAS-20): The TAS-20 (Bagby et al., 1994a, b; Italian version: Bressi et al., 1996) is a 20-item self-report scale and was used to assess the levels of alexithymia. Items (e.g., *"I don't know what's going on inside me"*) are rated on a seven-point Likert scale from 1 ("*strongly disagree*") to 5 ("*strongly agree*"). In the present study, the Italian TAS-20 showed very good internal consistency ($\alpha=0.84$).

Dissociative Experiences Scale-II (DES-II): The DES-II (Carlson & Putnam, 1993; Italian version: Schimmenti 2016) is a 28-item self-report scale and was used to assess the levels of dissociation. Items (e.g., *"Some people find evidence that they have done things that they do not remember doing"*) are rated on a 11-point Likert scale, from 0 ("*never*") to 100 ("*always"*). In the present study, the Italian DES-II showed excellent internal consistency (α = 0.96).

Barratt Impulsiveness Scale–11(BIS-11): The BIS-11(Patton et al., 1995; Italian version: Fossati et al., 2001) is a 30-item self-report scale and was used to assess levels of impulsivity. Items (e.g., *"I act on impulse"*) are rated on a four-point Likert Scale, from 1 ("*rarely/never*") to 4 ("*almost always/always*"). In the present study, the Italian BIS-11 showed very good internal consistency sample (α = 0.82).

Data Analysis

All the statistical analyses were performed using SPSS (v. 21.0; IBM, New York, USA) and AMOS (v. 24.0; IBM, New York, USA) for Windows. Descriptive statistics and Pearson's *r* correlations were calculated. The hypothesized model was investigated by implementing a path analysis (Bollen & Long, 1993) and evaluating the statistical fit based on a range of goodness-of-fit indicators: the discrepancy divided by degree of freedom (CMIN/DF), suggesting a reasonable fit for values less than 5 (Marsh & Hocevar, 1985); the goodness of fit (GFI), suggesting a reasonable fit for values above 0.90 (Kline, 2015; Hu & Bentler, 1999); the normed-fit index (NFI), suggesting a reasonable fit for values above 0.90 (Byrne, 1994); the Comparative Fit Index (CFI), suggesting a reasonable fit for values above (Hu & Bentler, 1999; Kline, 2015); and the standardized root mean square residual (SRMR), indicating a reasonable fit for values less than 0.08 (Fabrigar et al., 1999). Finally, the bias-corrected bootstrap procedure (5000 bootstrapped samples) was used to assess the statistical stability of the model (Preacher & Hayes, 2008).

Results

Based on the SOGS cut-off, descriptive statistics of the sample found that 69.8% of participants reported an absence of problematic gambling, 12.5% were at-risk for problematic gambling, and 17.7% were classed as having problematic gambling (see Table 1). Further analysis found that problematic gambling was significantly and positively related to fearful ($r = .266$, $p < .01$) and preoccupied ($r = .283$, $p < .01$) attachment patterns, while no significant association was found with secure and dismissing attachment styles (see Table 2). Problematic gambling was also significantly and positively associated with alexithymia ($r = .303$, $p < .01$), dissociation ($r = .372$, $p < .01$), and impulsivity ($r = .361$, $p < .01$). With regards the path analysis, the emerging mixed mediation model showed an excellent fit to the data: CMIN/DF = 4.447, GFI = 0.984, NFI = 0.964, CFI = 0.971, SRMR = 0.046 (see Fig. 1).

More specifically, fearful and preoccupied attachment patterns showed a significant total effect in their relationship with problematic gambling ($\beta = 0.19$, $p < .01$ and $\beta = 0.14$, $p < .05$, respectively). Furthermore, both fearful and preoccupied attachment styles were also related to alexithymia ($\beta = 0.20$, $p < .001$ and $\beta = 0.23$, $p < .001$, respectively). Alexithymia was significantly associated with dissociation ($\beta = 0.47$, $p < .001$) and impulsivity ($\beta = 0.38$,

Table 2 Correlation matrix

	1	2	3	4	5	6	7
1. Problem gambling	1						
2. Secure attachment	−0.090	1					
3. Fearful attachment	**0.266****	−0.097	1				
4. Preoccupied attachment	**0.283****	−0.083	**0.459****	1			
5. Dismissing attachment	0.096	**−0.187****	−0.025	0.027	1		
6. Alexithymia	**0.303****	**−0.238****	**0.304****	**0.323****	0.049	1	
7. Dissociation	**0.372****	**−0.138****	**0.167****	**0.310****	0.099	**0.467****	1
8. Impulsivity	**0.361****	**−0.179****	**0.183****	**0.287****	0.026	**0.520****	**0.486****

Note: Bold value indicates significant *p*-values. **. Correlation is significant at the 0.01 level (2-tailed)

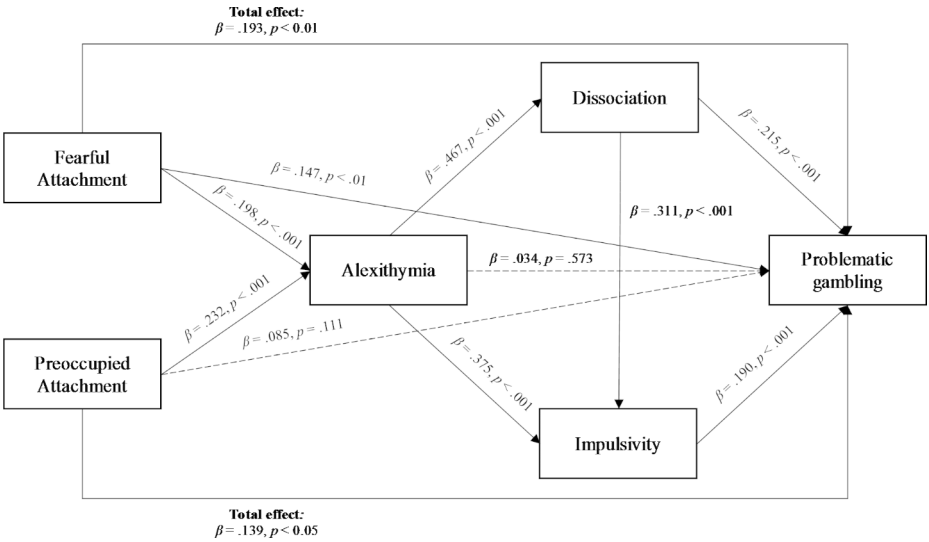

Fig. 1 Path analysis exploring the role of alexithymia, dissociation, and impulsivity in the relationship between fearful and preoccupied attachments and problematic gambling: a multiple mediation model
Note: alexithymia, dissociation, and impulsivity mediated the relationship between fearful attachment (partial mediation) and preoccupied attachment (total mediation) patterns and problematic gambling

$p<.001$), which were sequentially related ($\beta=0.31$, $p<.001$). Finally, while the direct relationship between alexithymia and problematic gambling was not significant ($\beta=0.03$, $p=.573$), dissociation and impulsivity showed significant and positive associations with problematic gambling ($\beta=0.22, p<.001$ and $\beta=0.19, p<.001$, respectively). When included in the model, these variables partially mediated the effect of fearful attachment on problematic gambling ($\beta=0.15$, $p<.01$), and totally mediated the effect of preoccupied attachment on problematic gambling ($\beta=0.09$, $p=.111$). Finally, the bias-corrected bootstrap procedure confirmed the statistical stability of the model (see Table 3).

Table 3 Coefficients of the multiple mediation model

	Estimate	SE	*p*	Boot LLCI	Boot ULCI
Total effects					
Fearful → Problematic gambling	0.474	0.157	0.002	0.172	0.786
Preoccupied → Problematic gambling	0.407	0.191	0.019	0.058	0.820
Direct effects					
Fearful → Problematic gambling	0.361	0.151	0.015	0.071	0.66
Preoccupied → Problematic gambling	0.249	0.179	0.143	-0.08	0.620
Partial indirect effects					
Fearful → Alexithymia → Problematic gambling	1.492	0.425	0.001	0.710	2.361
Fearful → Alexithymia → Dissociation → Problematic gambling	2.217	0.426	<0.001	1.411	3.075
Fearful → Alexithymia → Impulsivity → Problematic gambling	1.887	0.427	<0.001	1.093	2.770
Fearful → Alexithymia → Dissociation → Impulsivity → Problematic gambling	2.428	0.429	<0.001	1.629	3.306
Preoccupied → Alexithymia → Problematic gambling	2.084	0.486	<0.001	1.090	2.972
Preoccupied → Alexithymia → Dissociation → Problematic gambling	2.810	0.506	0.001	1.759	3.728
Preoccupied → Alexithymia → Impulsivity → Problematic gambling	2.480	0.491	0.001	1.458	3.383
Preoccupied → Alexithymia → Dissociation → Impulsivity → Problematic gambling	3.020	0.506	0.001	1.966	3.946
Total indirect effects					
Fearful → Problematic gambling	0.113	0.045	0.001	0.044	0.227
Preoccupied → Problematic gambling	0.158	0.056	<0.001	0.068	0.286

Discussion

Gambling disorder is classified as a behavioral addiction given the significant impairment in the functioning of individuals, and the sharing of behavioral and psychobiological elements with substance use disorders (APA, 2013, 2022). However, empirical evidence has also shown specific features that are unique to this disorder such as chasing losses (e.g., Griffiths

& Calado 2022; Zhang & Clark, 2020). Therefore, the application of general theoretical addiction models to this specific psychopathology appears to be of scientific interest and clinical utility. Therefore, the present study explored the role of attachment, alexithymia, dissociation, and impulsivity in contributing to problematic gambling, with the primary theoretical orientation being self-regulation theory (Brown, 1998; Padykula & Conklin, 2010; Rogier & Velotti, 2018).

Results showed that fearful and preoccupied attachment patterns were significantly and positively associated with problematic gambling, supporting H_1. This is in line with previous evidence emphasizing the relationship between insecure-anxious attachment and gambling disorder (Grajewski & Dragan, 2020). Therefore, the results define and enrich the findings of previous preliminary studies suggesting the role of fearful and preoccupied attachments in discriminating across different severity levels of the disorder (Pace et al., 2013). Such findings further support the view of addiction as an attachment disorder (Flores, 2004).

The fearful and preoccupied patterns were also significantly and positively related to alexithymia, confirming H_2. This finding can be viewed in light of the central role of the attachment relationship in favoring the development of the capacity and ability to cope with everyday adversity (Mikulincer & Shaver, 2007). On the other hand, an insecure attachment may hinder the development of adequate regulatory skills, and this may predispose individuals to emotional maladjustment (Beebe & Lachmann, 2002; Fletcher et al., 2015). Moreover, although the partial indirect effect involving attachment, alexithymia, and problematic gambling was found to be significant (see Table 3), when dissociation and impulsivity were included in the model, alexithymia was significantly and positively associated with these variables but its relationship with problematic gambling became non-significant (partially confirming H_3). In turn, dissociation was significantly and positively related to impulsivity, and both these variables showed a significant and positive association with problematic gambling (supporting both H_4 and H_5). In other words, the findings confirm the core role of alexithymia in contributing to gambling addiction, in line with what has been observed for other behavioral addictions (Gori et al., 2021, 2022b; Gori & Topino, 2023). However, in the present model, the effect of alexithymia on gambling disorder levels (Bonnaire et al., 2017) can be interpreted as the result of maladaptive (i.e., dissociative and impulsive) ways of dealing with dysregulated internal emotional states. These results further support the well-documented effects of dissociation (see Rogier et al. (2021) for a review) and impulsivity (see Ioannidis et al. (2019) for a meta-analysis) on problematic gambling.

Finally, results indicated that alexithymia, dissociation, and impulsivity mediated the relationship between fearful attachment (partial mediation) and preoccupied attachment (total mediation) patterns and problematic gambling, confirming the final hypothesis (H_6). All these findings fit well with an application of the self-regulation theory to gambling disorder (Brown, 1998; Padykula & Conklin, 2010; Rogier & Velotti, 2018). Therefore, problematic gambling may be seen as the result of dissociative and impulsive attempts by individuals to search for external regulation of internal dysregulated emotional states (alexithymia), alongside the manifestation of insecure attachment patterns that hinder the development of the ability to effectively manage and understand individuals' affective experiences (Gori et al., 2022a; McCormick et al., 2012; Topino et al., 2021).

This present study has some limitations that should be highlighted. First, the cross-sectional nature of the research requires caution in interpreting any causality between variables. Although the associations have been extensively described in the literature, longitudinal

research is needed to further support these results. Given that the research relied on a cross-sectional design, the relationship between the observed variables and problem gambling could be further explored in future studies by implementing randomized controlled trials and testing the effectiveness of therapeutic interventions focused on these risk factors. Additionally, the use of snowball sampling and the modest non-representative sample may limit the generalizability of the results. The use of probabilistic sampling methods with bigger sample sizes could overcome this limitation in future research. Moreover, all of the data were self-report (subject to various methodological biases) and the sample was a community sample rather than being a clinical sample. Finally, no information on preferences relating to different types of gambling was collected. The exploration of the influence of this factor in the analyzed relationships could be an interesting direction in future research, along with the use of clinical samples and mixed methods studies.

Conclusions

Given its negative effects, consequences and outcomes, gambling disorder represents a major public health problem (Potenza et al., 2019). The present study provides a further contribution to the field of research by exploring the antecedents of this phenomenon by analyzing the relationship between several factors that may influence problematic gambling. The results showed that alexithymia, dissociation, and impulsivity mediated the relationship between fearful attachment (partial mediation) and preoccupied attachment (total mediation) patterns and problematic gambling among a sample of regular gamblers. Such findings may have some practical implications for clinical practice and prevention initiatives. For example, given the greater risk for individuals with fearful and preoccupied attachment, individuals with these styles may be a target population that could benefit most from preventive interventions (e.g., Grande-Gosende et al., 2020). Indeed, previous empirical studies have shown significant associations between attachment and a number of factors which, in addition to those considered in the present study, may influence gambling severity, such as gambling motives (Jauregui & Estevez, 2020) and depressive symptomology (Keough et al., 2018). Therefore, in line with previous conceptualizations and research (e.g., Gori et al., 2022a) insecure attachment and, more specifically, fearful and preoccupied patterns, can be considered important elements of vulnerability on which preventive activities can be addressed to avoid a series of chain reactions that can result in problem gambling. Highlighting the connection between the variables involved in the present study also suggests the possibility of basing treatment on them aimed at limiting risk factors. More specifically, orienting the clinical work to limiting alexithymia (e.g., Cameron et al., 2014), or both dissociation (e.g., Bailey & Brand 2017) and impulsivity (e.g., Davis et al., 2019) could be effective among patients who report preoccupied attachment and high levels of problematic gambling since the findings here suggest that the relationship between these two variables occurs mainly in an indirect way. On the other hand, this may not be sufficient for individuals with fearful attachment, since this was associated with problematic gambling both directly and indirectly.

Author Contributions **Eleonora Topino**: methodology (equal); formal analysis (equal); data curation (equal); writing—original draft preparation (equal); writing—review and editing (equal). **Mark D. Griffiths**: writing—original draft preparation (equal); writing—review and editing (equal); supervision (equal). **Alessio**

Gori: Conceptualization (lead); methodology (equal); formal analysis (equal); data curation (equal); writing—original draft preparation (equal); writing—review and editing (equal); supervision (equal). All authors have read and agreed to the published version of the manuscript.

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Data availability The data that support the findings of the present study are available from the corresponding author upon reasonable request.

Declarations

Conflict of interest The authors declare that they have no conflict of interest except MDG. MDG has received research funding from *Norsk Tipping* (the gambling operator owned by the Norwegian government). MDG has received funding for a number of research projects in the area of gambling education for young people, social responsibility in gambling and gambling treatment from Gamble Aware (formerly the Responsibility in Gambling Trust), a charitable body which funds its research program based on donations from the gambling industry. MDG undertakes consultancy for various gambling companies in the area of social responsibility in gambling.

Ethics Approval All procedures followed were in accordance with the ethical standards of the responsible committee Integrated Psychodynamic Psychotherapy Institute (IPPI; ethical approval number 013/2022) and with the Helsinki Declaration of 1975, as revised in 2000 (5).

Informed Consent Informed consent was obtained from all participants for being included in the study.

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