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ORIGINAL RESEARCH

Narcissism, personal luck, problem gambling: comparing gambling types

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Résumé :

Contexte : Les recherches antérieures ont examiné les liens entre le narcissisme, les distorsions cognitives et le jeu pathologique, en particulier chez les joueurs stratégiques et non stratégiques. Cependant, la « chance personnelle » perçue, considérée comme une forme de distorsion cognitive, n'a pas été étudiée de manière approfondie, notamment chez les joueurs mixtes. Cette étude explore les relations entre le narcissisme, la chance personnelle perçue et le jeu problématique selon différents types de jeux de hasard. **Méthodes** : L'échantillon comprenait 177 joueurs réguliers (âge moyen = 34,0 ans), répartis en joueurs stratégiques (n = 89), non stratégiques (n = 35) et mixtes (n = 35). Les participants ont complété l'Indice de gravité du jeu problématique (Problem Gambling Severity Index), l'Inventaire de personnalité narcissique (Narcissistic Personality Inventory) et l'Échelle d'utilisation de la chance personnelle (Personal Luck Usage Scale) afin d'évaluer leurs comportements de jeu et les traits associés. **Résultats** : Les joueurs mixtes présentaient des niveaux de jeu problématique significativement plus élevés que les autres types de joueurs, ainsi qu'un degré de narcissisme supérieur à celui des joueurs stratégiques. Le narcissisme était significativement associé au jeu problématique chez les joueurs stratégiques. La chance personnelle perçue était significativement associée au jeu problématique uniquement chez les joueurs mixtes. **Discussion** : Les résultats suggèrent que le narcissisme et la chance personnelle perçue sont particulièrement pertinents chez les joueurs mixtes. Ces conclusions soulignent la nécessité de développer des interventions thérapeutiques prenant en compte des facteurs individuels, incluant les traits de personnalité et les distorsions cognitives, tout en considérant le type de jeu privilégié dans les plans de traitement.

Mots-clés : Jeu problématique ; type de jeu ; narcissisme ; distorsions cognitives ; chance personnelle

Abstract:

Context: Previous research has explored links between narcissism, cognitive distortions, and problem gambling, particularly in strategic and non-strategic gamblers. However, perceived personal luck, a type of cognitive distortion, has not been thoroughly examined, especially among mixed gamblers. This study investigates the relationships between narcissism, perceived personal luck, and problem gambling across different gambling types. **Methods**: The sample included 177 regular gamblers (mean age = 34.0), categorized as strategic (n=89), non-strategic (n=35), and mixed gamblers (n=35). Participants completed the Problematic Gambling Severity Index, the Narcissistic Personality Inventory, and the Personal Luck Usage Scale to assess their gambling behaviors and related traits. **Results**: Mixed gamblers showed significantly higher levels of problem gambling than other gambler types and also exhibited greater narcissism compared to strategic gamblers. Narcissism was significantly associated with problem gambling among strategic gamblers. Perceived personal luck was significantly associated with problem gambling only among mixed gamblers. **Discussion**: The findings suggest that narcissism and perceived personal luck are particularly relevant for mixed gamblers. These results highlight the need for therapeutic interventions that consider individual factors, including personality traits and cognitive distortions, while accounting for the preferred gambling type in treatment plans.

Key-words: Problem gambling; gambling type; narcissism; cognitive distortions; personal luck

1. INTRODUCTION

In 2019, nearly half of the French population engaged in gambling activities (1). Gambling can be categorized into non-strategic games (e.g., slot machines, scratch cards) which are based on chance, and strategic games (e.g., poker, blackjack, sports betting) where skill can affect outcomes (2-3). Mixed gamblers, considered as individuals who engage both in games of pure luck and games with a part of skill, also form a significant group in the gambling population (1). About one million French adults show problematic gambling behaviors, a number that has risen since 2014, with strategic and mixed gamblers at higher risk (1), and mixed gamblers having been found to have higher rates of problem gambling than

strategic gamblers (46). These trends can be in part attributed to the structural features of online strategic games, online gambling being considered as a risk factor for problem gambling (1). They can also be subsequent to individual features such as age, gamblers who engage in strategic gambling having shown to be younger than their non-strategic counterparts (3) and being younger having been also highlighted as a risk factor for problem gambling (1). Moreover, according to the Pathways model, problem gambling arises from various factors, including personality traits like narcissism and cognitive distortions, both of which may vary depending on the type of gambling game (4-5).

Narcissism and Problem Gambling

Research highlights the role of personality traits in problem gambling, with impulsivity and excitement-seeking being key traits (6). However, narcissism has received less attention. Narcissism involves an inflated sense of superiority and a focus on maintaining a positive self-image (7-8). Studies suggest narcissism is linked to problem gambling, with 'narcissistic gamblers' showing overconfidence, risk-taking, and reward focus (8). Strategic gamblers generally display higher levels of narcissism than non-strategic gamblers (9-10). While studies have explored narcissism in strategic and non-strategic gamblers, none have examined its role in mixed gamblers, despite this group showing higher rates of problem gambling (11).

Perceived Personal Luck and Problem Gambling

Cognitive distortions are pervasive in problem gambling, particularly the illusion of control, where gamblers believe they can influence outcomes (12-13). Belief in luck and in personal luck are forms of this illusion, and are strongly correlated with problem gambling (14-15). Problem gamblers often see themselves as luckier than others, a belief that can exacerbate gambling behaviors (15). While strategic gamblers tend to attribute success to skill rather than luck, some studies suggest that non-strategic gamblers are more likely to believe in personal luck (16-17), which may be attributed to the structural characteristics of non-strategic games, where luck is the sole determinant of outcomes. Nevertheless, other findings suggest that strategic gamblers may also perceive greater personal luck than their non-strategic counterparts, potentially due to these individuals' tendency to believe they exhibit particular features and virtues (18). Moreover, despite these insights, no study has yet explored perceived personal luck among mixed gamblers, even though this group exhibits high levels of gambling-related cognitive distortions and illusion of control (19,46).

Narcissism and Problem Gambling: The Mediating Role of Perceived Personal Luck

Narcissism and the belief in personal luck share common thought patterns, such as feelings of uniqueness and an inflated self-concept (8,20). Narcissistic individuals tend to attribute successes to internal traits, which aligns with beliefs in personal luck (21-22). Narcissism has also been linked to unusual beliefs, potentially encompassing perceived personal luck (23). Both narcissism and perceived personal luck are associated with problem gambling (8-20), and studies show links between narcissistic admiration and belief in luck (24-25). While cognitive distortions have been found to mediate the relationship between narcissism and problem gambling in both strategic and non-strategic gamblers (9-10), no study has specifically tested the mediating role of perceived personal luck in this dynamic. Given that gambling exists on a continuum between chance and skill, examining personal luck as a cognitive distortion among narcissistic gamblers, while considering their preferred gambling type, could enhance our understanding of how gamblers perceive control over outcomes.

The Present Study

Over the past two decades, research has sought to refine the Pathways model of problem gambling and explore how preferred gambling type shapes the profile of problem gamblers (26). Narcissism has emerged as a personality trait linked to problem gambling (8,27), with strategic gamblers showing higher levels of narcissism than non-strategic gamblers (9-10). However, the impact of gambling type on this relationship remains underexplored. Additionally, cognitive distortions have been shown to mediate the link between narcissism and problem gambling (9-10), though the specific role of perceived personal luck has yet to be examined, particularly when controlling for gambling type. Investigating these factors is important, given conflicting findings on perceived luck across different gambling preferences (18,28-29). Moreover, the dynamics between narcissism and perceived luck in mixed-type gamblers are still unexplored. Therefore, our study aimed to investigate the relationships between narcissism, cognitive distortions (particularly perceived luck), and problem gambling, accounting for gambling type. We hypothesized the following:

H1: Problem gambling will be significantly higher for mixed gamblers than for strategic and non-strategic gamblers.

H2: Narcissism will be significantly higher for mixed gamblers, and positively associated with problem gambling for all types of gamblers.
H3: Perceived personal luck will be significantly higher for mixed gamblers, and positively associated with problem gambling for all types of gamblers.
H4: Perceived personal luck will mediate the relationship between narcissism and problem gambling among all types of gamblers.

2. MATERIELS ET METHODES

2.1. Participants

In order to include only gamblers legally of age to gamble in France, this study includes individuals (men and women) aged 18 or over. In order to include only active gamblers, participants had to have gambled at least once a week in the last 12 months (i.e., 52 times or more) or spent at least 500 euros on gambling in the last 12 months, in line with the qualification thresholds for active gambling used by some empirical studies (29). The study was conducted between February 2024 and April 2024. All participants received information about the survey and provided written informed consent. Participants were recruited online, via an advertisement containing a brief presentation of the study and a link to the online survey, posted on Internet-gambling forums, broad-discussion forums, and social media. Participants were also recruited offline at the only casino near Paris. Researchers were allowed access inside the casino. They approached participants either as they were waiting on line to pay for casino entrance or as they were walking around slot machine rooms. Participants were given a flyer containing the study's QR code and asked to fill out the online survey in their free time. The total sample was composed of 177 participants with a mean age of 34.0 (SD = 12.3).

2.2. Measures

2.2.1. Sociodemographic Information

Sociodemographic information was collected in this study using a questionnaire created for the study. It asked questions about gender, age, employment status, marital status, frequency of gambling activity

2.2.2. Gambling and Problem Gambling data

Regarding gambling data, type of games most frequently played were provided by participants in order to classify them by subtypes of gamblers. Strategic gamblers included both offline and online poker, blackjack, sports betting and horse betting; non-strategic gamblers included roulette offline and online, slot machines offline, scratch tickets offline and online, lottery offline (3). Mixed gamblers included participants playing at least one type of gambling classified as strategic gambling and one classified as non-strategic gambling. Severity of problem gambling was assessed with the Problem Gambling Severity Index (PGSI; 30; French version; 31). This instrument is a subscale of the Canadian Problem Gambling Index (CPGI; 30), a self-report questionnaire measuring the severity of problem gambling over the past 12 months. It comprises 9 items rated on a 4-point Likert-type scale, from (Never) to (Almost always). A score of 0 indicates non-problem gambling, a score of 1 or 2 indicates low at-risk gambling, a score of 3 to 7 indicates moderate at-risk gambling, and a score of 8 or more indicates excessive gambling. In our study, participants with a score 0 to 2 were classified as non-problematic gamblers, and participants with a score ranging from 3 to 7 were classified as problem gamblers according to the guidelines of Costes et al. (1). In the current study, the internal consistency was very good (α= 0.88).

2.2.3. Narcissism

Narcissism as a personality trait was assessed using The Narcissistic Personality Inventory (NPI; 32; French version; 33). The NPI represents the gold standard for the evaluation of narcissistic personality traits, and was used in 77% of empirical studies evaluating the concept of narcissism (34-35). This 40-items self-report tool is considered a good measure of the maladaptive grandiosity dimension of narcissism (36). In its initial format, this scale has a dichotomous forced-choice format where participants are asked to select one statement within every dichotomous item that best describes their personality or opinion. Nevertheless, some authors (37-38) have chosen to convert the forced-choice response format into a 7-point Likert-type scale ranging from 'Totally disagree' to 'Totally agree', which is the format used in our study. Higher scores on the scale are found among individuals who exhibit higher narcissism (38). Correlations between the two formats are excellent (38-39). The French version of the instrument was empirically validated among 546 adults aged 19–59 years (33). The scale possesses excellent internal consistency (Cronbach alpha = 0.91) and

is reliable over time (r = 0.79; 33). The scale's internal consistency in our current study was excellent (α= 0.94).

2.2.4. Perceived Personal Luck

Perceived personal luck in gambling was measured with the Personal Luck Usage Scale (PLUS; 40), which measures individuals' perception of being personally lucky when gambling. It consists of an 8-item self-report questionnaire, rated using a 5-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). The internal consistency of the scale is excellent (40). As of today, there is no validated French version of the PLUS (40); therefore, a retro translation of the tool into French was carried out for the purposes of this study, based on the method of Vallerand (41). The internal consistency of the French-translated version of the PLUS used in the study was very good (α= 0.89).

2.3. Statistical Analysis

Non-parametric tests were run given the non-normal distribution of the data on our variables of interest found through preliminary statistical and plot analysis. First, descriptive statistics were run. Then, Kruskall-Wallis and Wilcoxon-Mann-Whitney tests were used to analyze the differences among gamblers based on gambling type on PGSI, NPI total and PLUS total scores. Next, Spearman tests were performed to assess correlations between PGSI and NPI total scores, PGSI and PLUS total scores, and NPI and PLUS total scores for our three groups of gamblers. Last, we planned to perform non-parametric linear regressions, and a bootstrap mediation analysis to determine whether NPI and PLUS total scores were predictors of PGSI total scores. A p value of < 0.05 was used as a test of significance with a bootstrap correction for multiple comparisons. Given the relatively small sample size in our study, the Bonferroni correction, though widely used, can be overly conservative in such contexts, potentially increasing the risk of Type II errors. The bootstrap approach, on the other hand, provides a more tailored estimation of significance by resampling the observed data, offering increased statistical power for small datasets. All analyses were conducted using R Studio.

2.4. Ethics

In this study, only gamblers from the general population were included. Prior to completing the survey, all participants provided informed consent, affirming their voluntary engagement and understanding of the study's purpose and procedures which they reviewed using the information letter before signing the consent from. This study was approved by the Institute of Psychology of
the University of Paris Cité. We certify that the study was performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards. This study was completely anonymous.

3. RESULTATS

3.1. Sociodemographic data across Gambling Types

Based on sociodemographic data collected, 50.3% of the sample comprised strategic gamblers, 29.9% were mixed gamblers, and 19.8% were non-strategic gamblers. The majority were employed (53.7%). Most participants were single (59.9%). In regard to scores on study scales, PGSI mean scores were the highest for the mixed gamblers sample (6.2). NPI mean scores were also the highest for mixed gamblers (155.3). Finally, regarding PLUS mean scores, it is non-strategic gamblers who exhibited the highest rates (20.6). Detailed descriptive data by gambling type is further presented in Table 1.

3.2. Levels of Problem Gambling Across Gambling Types

Group comparison analysis revealed that (see Table 2), regarding problem gambling, mixed gamblers scored significantly higher than non-strategic gamblers with a weak effect size ($p = 0.03$, $W = 670$, $r = 0.17$) and strategic gamblers with a weak effect size as well ($p = 0.001$, $W = 1604$, $r = 0.16$). No significant difference in levels of problem gambling was found between strategic and non-strategic gamblers.

3.3. Associations between Narcissism and Problem Gambling Across Gambling Types

Regarding narcissism (see Table 2), mixed gamblers scored significantly higher than strategic gamblers with a weak effect size ($p = 0.03$, $W = 670$, $r = 0.17$), while there was no significant difference between non-strategic gamblers and mixed gamblers, and between strategic and non-strategic gamblers. Only among strategic gamblers, a significant positive correlation was observed between problem gambling and narcissism ($rs = 0.23$, $p = 0.03$). These results are included in Table 3.

	Total sample (n=177)	Strategic gamblers (SG ; n=89)	Non-strategic gamblers (NSG ; n=35)	Mixed gamblers (MG ; n=53)
Age *m(SD)*	34.0 (12.3)	37.8 (12.2)	28.8 (9.7)	30.8 (11.9)
Gender *%(n)*				
Male	71.8 (127)	91.0 (81)	34.3 (12)	32.1 (17)
Female	26.6 (47)	7.9 (7)	65.7 (23)	64.2 (34)
Other	1.7 (3)	1.1 (1)	0.0 (0)	3.8 (2)
Employment status				
Employed	53.7 (95)	62.9 (56)	37.1 (13)	49.1 (26)
Student	25.4 (45)	12.4 (11)	42.9 (15)	35.8 (19)
Retired	5.6 (10)	7.9 (7)	0 (0)	5.7 (3)
Unemployed	6.8 (12)	7.9 (7)	2.9 (1)	7.5 (4)
Other	8.5 (15)	9.0 (8)	17.1 (6)	1.9 (1)
Marital status *%(n)*				
Single	59.9 (106)	47.2 (42)	68.6 (24)	75.5 (40)
Married	36.7 (65)	49.4 (44)	28.6 (10)	20.8 (11)
Separated/divorced	2.8 (5)	2.2 (2)	2.9 (1)	3.8 (2)
Widowed	0.6 (1)	1.1 (1)	0 (0)	0 (0)
Preferred gambling type *%(*				
Poker offline / online	27.1 (48) / 50.3 (89)	34.8 (31) / 65.2 (58)	NA	32.1 (17) / 58.5 (31)
Blackjack offline / online	7.3 (13) / 7.9 (14)	2.2 (2) / 2.2 (2)	NA	20.8 (11) / 22.6 (12)
Sports betting offline / online	15.3 (27) / 38.4 (68)	14.6 (13) / 37.1 (33)	NA	26.4 (14) / 66.0 (35)
Horse betting offline / online	7.9 (14) / 9.6 (17)	9.0 5 (8) / 11.2 (10)	NA	11.3 (6) / 13.2 (7)
Roulette offline / online	7.9 (14) / 7.3 (13)	NA	0.0 (0) / 2.9 (1)	26.4 (14) / 22.6 (12)
Slot machines offline	10.2 (18)	NA	14.3 (5)	24.5 (13)
Scratch tickets offline / onlin	33.9 (60) / 15.3 (27)	NA	65.7 (23) / 31.4 (11)	69.8 (37) / 30.2 (16)
Lottery offline	7.3 (13)	NA	28.5 (10)	7.5 (4)

Table 1 : Sociodemographic Features and Gambling Data of the Sample

	PGSI	NPI	PLUS
	m(SD)	*m(SD)*	*m(SD)*
Total sample (n=177)	4.0 (4.8)	146.8 (38.5)	19.2 (7.0)
SG (n=89)	3.1 (3.9)	139.4 (36.8)	18.1 (6.5)
NSG (n=35)	3.4 (3.9)	152.7 (34.0)	20.6 (7.4)
MG (n=53)	6.2 (6.0)	155.3 (42.3)	20.3 (7.4)
p			
SG - NSG	1.000	0.159	0.216
SG - MG	0.003*	0.033*	0.213
NSG - MG	0.042*	1.000	1.000

Table 2 . Comparison between Gambler Types on PGSI, NPI and PLUS Scores
*Note : *p < 0.05*

	r_s (PGSI-NPI)	r_s (PGSI-PLUS)	r_s (NPI-PLUS)
SG (n=89)	0.23*	0.10	0.18
NSG (n=35)	0.06	-0.05	-0.09
MG (n=53)	0.12	0.41*	0.28*

Table 3 . Correlation coefficients between PGSI, NPI and PLUS Scores across Gambler Types
*Note : *p < 0.05*

3.4. Associations between Narcissism, Perceived Personal Luck and Problem Gambling Across Gambling Types

A significant positive correlation was observed between narcissism and perceived personal luck ($r_s = 0.28$, $p = 0.04$) among mixed gamblers. Given that no significant relationship was found between both narcissism and perceived personal luck and problem gambling in any gambling group, we didn't proceed to a mediation analysis.

4. DISCUSSION

4.1. Main results

Our study's main objective was to investigate the relationships between narcissism, cognitive distortions (particularly perceived luck), and problem gambling, accounting for gambling type. In order to do so, we first assessed every variable related to problem gambling separately, comparing between gambling types each time. We thus set the basis to investigate our culminating point of focus, the mediating effect of perceived luck in the relationship between narcissism and problem gambling, based on gambling type.

When first comparing levels of problem gambling across different gambling types, we found that mixed gamblers showed significantly higher levels of problem gambling than both strategic and non-strategic gamblers, consistent with previous findings (1,11). This supports the "involvement effect" theory, where engaging in multiple gambling activities increases the risk of problematic gambling (42). Indeed, mixed gamblers may have access to a variety of games, especially as the gambling offer is ever expanding in France, and they have the possibility to play both offline and online, which increases their involvement in gambling practice and decreases their ability to control their gambling behavior. While differences between strategic and non-strategic gamblers were expected but not found in our study, we did not control for gambling involvement, that is, defined gambling involvement, the number of types of gambling for which an individual reported being involved during the past 12 months (43). According to authors, this is a factor that can mitigate the relationship between gambling types and disordered gambling (43). Whether overall involvement could be a more powerful predictor of problem gambling than gambling type, we could expect that strategic gamblers and non-strategic gamblers in our sample had similar levels of gambling involvement. Further research would need to validate this hypothesis.

Next, we examined the relationship between narcissism and problem gambling across gambling types. Narcissism was significantly higher among mixed gamblers than strategic gamblers, while no significant differences in narcissism were found between non-strategic and mixed gamblers or strategic and non-strategic gamblers. This aligns with previous research that links narcissism with higher levels of problem gambling (8,11), our sample of mixed gamblers having the highest rates of problem gambling. These trends may additionally be explained by narcissists' tendency to believe in their specialness (7), which could be exacerbated by the illusion of mastering multiple types of games in the context of mixed gambling. Also, in our sample, narcissism appeared to be a factor associated with problem gambling only among strategic gamblers, consistent with previous findings on narcissism and problem gambling levels in poker players (10,27). This association among strategic gamblers can be possibly due to the positive social image of strategic gambling as a skillful activity that will eventually lead to economic prosperity with added practice (16). Such a positive image may be particularly attractive to narcissistic individuals, who already believe to be deserving of success, power and special favors (8). Among mixed gamblers, this personality trait may lead them to engage in multiple types of games, as narcissism can also be especially associated with impulsivity (44) but it does not necessarily correlate with problem gambling as our results show. It could also be that other psychological factors, such as anxiety, depression, or coping motives, may play a larger role in the development of a gambling practice (11), factors that we didn't account for in our study. No correlation between narcissism and problem gambling was observed for non-strategic gamblers, possibly due to sample characteristics like gender, as women tend to exhibit less grandiose narcissism (45). Another potential explanation could be that we don't see the positive connotation for non-strategic gambling that we see in strategic gambling because the former isn't usually associated with skill or power, therefore it is less appealing to narcissistic problem gamblers in our sample. Future studies should explore these variables further.

We also explored the relationship between perceived personal luck and problem gambling across gambling types. No significant differences were observed between gambling types, which aligns with studies that found no differences in illusion of control between strategic and mixed gamblers (46). However, it does

contradict evidence observing differences in levels of illusion of control and perceived personal luck between strategic and non-strategic gamblers (17,18,28). Indeed, it is surprising that we don't find differences in regard to perceptions of luck specifically for these two types of gambling, given the characteristics of the two different kinds of games as well as the way they are advertised by operators and perceived by gamblers, one being based off pure chance and the other one incorporating a part of skill. Levels of cognitive distortions being closely related to levels of problem gambling (15,20), these non-significant differences could be due to the similar levels of problem gambling found among the two groups. Furthermore, problem gambling scores being relatively low in the three gambling groups, especially among strategic and non-strategic gamblers, it could be that we didn't reach the threshold of problem gambling level that would've allowed us to capture such trends. Precisely, not perceiving oneself as being personally lucky may refrain gamblers from chasing an erroneous objective of such luck finally acting in their favor, and thus prevent them from continuous gambling. Within groups, perceived personal luck was significantly positively associated with problem gambling only among mixed gamblers, consistent with our discussed material on the link between perceived personal luck and problem gambling, and also with previous research (15). However, no significant relationship was found among strategic gamblers, which could be explained by their higher belief in personal skills over luck (16). That is, as discussed earlier, strategic gamblers may perceive more self-attributed abilities and skills, which would turn out be of a greater influence on the outcome of the game than luck, consistent with prior research on poker players (9). Additionally, no link was observed among non-strategic gamblers, possibly due to demographic factors like the overrepresentation of women, who may believe less in luck (46). Further research has shown that men in general tend to believe in luck more than women, but that perceived luck levels remain the same across genders among individuals with high problem gambling levels (47). Our sample of non-strategic gamblers having relatively low problem gambling scores, this could explain why we weren't able to capture such trends. Lastly, the significant association between personal luck and problem gambling among mixed gamblers suggests that practicing multiple types of games might reinforce their belief in being personally lucky, leading to problematic gambling behaviors via the "involvement effect" (42). Further research is needed to assess whether the number of games played correlates with an increased belief in personal luck among problem gamblers.

Our final goal was to investigate the relationships between narcissism, perceived personal luck, and problem gambling among all types of gamblers. We hypothesized that perceived personal luck would mediate the relationship between narcissism and problem gambling, but we could not test this hypothesis as the conditions for a mediation analysis were not met. Specifically, no significant links between narcissism, perceived personal luck, and problem gambling were found in any gambling type. For strategic and non-strategic gamblers, this contradicts previous studies that demonstrated a mediating effect of cognitive distortions between narcissism and problem gambling (9-10). In strategic gamblers, the belief in personal skills (9,16) may have weakened the association between narcissism, perceived personal luck, and problem gambling. For non-strategic gamblers, factors such as lower levels of problem gambling (8) and sociodemographic characteristics (45) could have similarly diminished the relationships needed for mediation. We expected to observe this mediation among mixed gamblers, especially since narcissism and perceived personal luck were both significantly associated with problem gambling in this group. One explanation for this association could be that individuals with high grandiose narcissism, as measured by the NPI (37), also exhibit high self-esteem (8), which may extend to the belief that they are personally lucky in gambling. These individuals may engage in both strategic and non-strategic games to validate their superiority, interpreting their wins as proof of personal luck and reinforcing their sense of uniqueness (8). However, despite these associations, we did not find a significant link between narcissism and problem gambling in mixed gamblers. This inconsistency raises questions that future research should explore using multifactorial assessments, controlling for potential confounding variables like gender.

4.2. Strengths and Limitations

This study has several limitations. The cross-sectional design limits the ability to infer causality. The relatively small sample size necessitated non-parametric analyses, and sociodemographic variables were not matched across gambling subtypes. Moreover, we gathered a sample with a relatively low problem gambling mean score, which could've been avoided had we gathered a larger sample size. Additionally, narcissism was assessed unidimensionally using the French version of the NPI (33), though research suggests that different facets of narcissism may relate to both gambling type and problem gambling (27). Future studies should address these design limitations and employ multidimensional assessments to better

capture the complex relationship between narcissism, perceived personal luck, and problem gambling. Despite these limitations, our study adds to the literature on personality and cognitive factors in gambling behavior. To our knowledge, it is the first to examine mixed gambling in relation to both narcissism and perceived personal luck, a known risk factor for problem gambling in France (1). Additionally, this study is the first to assess perceived personal luck as a specific cognitive distortion interacting with personality traits in problem gambling. Given existing evidence of links between narcissism and perceived personal luck (8, 20-22), these connections warrant further exploration in the context of gambling disorder.

5. CONCLUSION

Our study provides evidence that strategic problem gamblers exhibit higher levels of narcissism compared to non-problematic gamblers, which could be traced back to the positive social image of strategic gambling as a skill-based, fruitful activity (16). This suggests that interventions targeting strategic gamblers should address these positive perceptions of gambling. The link between perceived personal luck and problem gambling further supports cognitive-behavioral approaches that target erroneous beliefs about control over gambling outcomes (49). Our results highlight the need for a systematic assessment of perceived personal luck, especially among patients who are mixed gamblers, in these psychotherapeutic interventions. Additionally, our results support tailoring treatment to the preferred gambling type, as expression levels of personality traits and cognitive distortions seem to vary by gambling preference. For prevention, campaigns should challenge the belief that luck is controllable, and contributes to success in gambling (50). Targeting these ideas are particularly important given that the gambling industry, through advertisement, largely spreads the erroneous belief that a mix of continuous gambling and chance could lead to winning the jackpot (50). Furthermore, prevention measures should focus on dispelling the illusion of control related to skills or chance in gambling (13), on addressing the appeal of strategic gambling (16) to narcissistic individuals, and on highlighting the uncontrollable nature of gambling outcomes. Overall, this study underscores the need for precise, personalized interventions that account for both individual characteristics and gambling preferences in addressing problem gambling.

6. REFERENCES

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