COMMENTARY

Commentary on Nower et al: The Pathways Model should apply to non-clinical gambling patterns

Nower et al. [1] report new data on the pathways model of problem gambling that substantiate the original 3 'subtypes' and clarify some nuances of the original model. Despite a strong assertion that the model was intended to describe clinically relevant heterogeneity among those with gambling problems, we suggest this neo-Kraepelinian assumption is superseded by contemporary research showing a continuum of gambling problems.

Since its original publication in 2002, the pathways model [1] has become a major framework for understanding the aetiology of problem gambling. This model quickly became influential, driving much clinical research into the subtyping and heterogeneity of problem gambling. In turn, this research profoundly impacted the treatment of gambling disorder, as many clinicians in the field tailor their interventions according to gambling subtypes. Of further significance, the pathways model integrates an array of etiological factors (biological, psychological and environmental) that are hypothesised to underpin transitions from casual to problematic gambling. In their latest study using a large sample of treatment-seeking gamblers, Nower et al. [2] describe further evidence for their three subgroups, but their analyses also indicate some revisions to the model. Notably, the 'antisocial-impulsivist pathway' (pathway 3) was clearly distinct from the 'emotionally vulnerable' pathway (pathway 2), whereas in the original model, the pathway 3 liabilities were conceptualized as additive upon pathway 2.

The recent paper [2] makes a strong assertion that the pathways model is intended to classify clinically relevant gambling patterns. Previous studies that either tested the model in non-clinical groups (or mixed samples including only a minority with gambling problems) or used statistical approach beyond cluster or latent profile analyses are said to have misinterpreted or misapplied the model. As the originators of the model, Nower and colleagues [2] are entitled to say that the model was intended to describe clinically relevant gambling patterns, but it is an empirical question to what extent these factors are also manifested across the broader spectrum of gambling involvement. Their assertion implicitly adopts a neo-Kraepelinian perspective [3] of a clear boundary between the 'normal' and the 'pathological'. This traditional viewpoint has been challenged and largely superseded by dimensional approaches to psychopathology [4,5]: in this case, a continuum of gambling involvement that further justifies the study of 'normal' individuals (i.e. healthy gamblers) to understand the etiological processes of disordered gambling [6,7]. As a prototypical example, psychotic experiences such as hallucinations and delusions are common among individuals who do not reach a diagnostic threshold or suffer from clinically relevant functional impairment [8,9]. Disease categories have been particularly contested in the case of personality disorders [10,11], which is notable given that antisocial personality disorder is a feature of pathway 3. In fact, a large proportion of the evidence in psychopathology research result from studies conducted in the general population [5], and this point applies equally well to the field of gambling studies.

From a data-analysis perspective, the pathways model has inspired a subfield of research looking to characterize the heterogeneity among gamblers with profiling approaches such as cluster analysis [12,13] or latent class analysis [2,14]. When applied to the pathways model, these procedures generate some specific issues. One pertains to the degrees of freedom that exists in supporting (or refuting) the pathways model. In principle, profiling approaches conducted with the relevant pathways variables should indicate that a 3 class solution provides best fit to the data. In practice, determining the number of classes results from a combination of goodness of fit statistics and theory, which may increase the likelihood of favouring 3 class-solutions. In reality, a common scenario is for a profiling technique to identify more than 3 clusters as the optimal solution, where those clusters align with the pathways via a range of possible mappings [12,14]. These techniques can also generate superficial classes, such as subgroups who score in the low (or high) range on all variables [15].

Mindful of both of these points, we assert that there is a need for alternative research designs and data-analytic approaches that can characterize key factors present in the pathways model in a way that acknowledges both their dimensional nature (from non-problematic to problematic gambling) and their heterogeneous expression. Expanding the remit of the pathways model is underscored by the very low rates of treatment seeking in people with gambling problems [16]. Progress would also incorporate statistical approaches such as regression models or network analytical approaches [17] that do not necessarily assume gambling pathways to be discrete and categorical entities, and

lab and field studies relying on cognitive, emotional, behavioural and computational approaches.

KEYWORDS

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AUTHOR CONTRIBUTIONS

JB and LC wrote the original draft of the manuscript. All authors contributed to and have approved the final manuscript.

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REFERENCES

1. Nower L, Blaszczynski A, Anthony WL. Clarifying gambling subtypes: The revised pathways model of problem gambling. Addiction. 2021 Epub ahead of print. https://doi.org/10.1111/add.15745
2. Blaszczynski A, Nower L. A pathways model of problem and pathological gambling. Addiction. 2002;2002(97):487–99.
3. Klerman GL. The evolution of a psychiatric nosology. In: Shershow JC, editorSchizophrenia: science and practice. Cambridge: Harvard University Press; 1978:99–121.
4. Bentall P. Madness Explained: psychosis and human nature. London: Allen Lane; 2003.
5. Sroufe LA. Considering normal and abnormal together: The essence of developmental psychopathology. Dev Psychopathol. 1990;2: 335–47.
6. Lorains FK, Cowlishaw S, Thomas SA. Prevalence of comorbid disorders in problem and pathological gambling: Systematic review and meta-analysis of population surveys. Addiction. 2011;106:490–8.
7. Toce-Gerstain M, Gerstein DR, Volberg RA. A hierarchy of gambling disorders in the community. Addiction. 2003;98:1661–72.
8. Tien AY. Distribution of hallucinations in the population. Soc Psychiatry Psychiatr Epidemiol. 1991;26:287–92.
9. van Os J, Hanssen M, Bijl RV, Ravelli A. Strauss (1969) revisited: A psychosis continuum in the general population? Schizophr Res. 2000;45:1–20.
10. Frances A. Categorical and dimensional systems of personality diagnosis: A comparison. Compr Psychiatry. 1982;23:516–27.
11. Livesley WJ. A framework for integrating dimensional and categorical classifications of personality disorder. J Pers Disord. 2007;21: 199–224.
12. Devos G, Clark L, Bowden-Jones H, Grall-Bronnec M, Challet-Bouju G, Khazaal Y, et al. The joint role of impulsivity and distorted cognitions in recreational and problem gambling: A cluster analytic approach. J Affect Disord. 2020;2020(260):473–82.
13. Moon M, Lister JJ, Milosevic A, Ledgerwood DL. Subtyping non-treatment-seeking problem gamblers using the pathways model. J Gambl Stud. 2017;33:841–53.
14. Black DW, Allen J. Testing the validity of the pathways model: A latent class analysis of potential pathological gambling subtypes in a non-treatment sample. J Gambl Stud. 2021 Epub ahead of print. https://doi.org/10.1007/s10899-021-10056-9
15. Delfabbro P, King DL. Conceptual and methodological issues in pathways model research. Int Gambl Stud. 2021 Epub ahead of print. https://doi.org/10.1080/14459795.2021.2003843
16. Sullivan S, McCormick R, Lamont M, Penfold A. Problem gambling: Patients affected by their own or another's gambling may approve of help from general practitioners. NZ Med J. 2007;120:U2605.
17. Borsboom D. A network theory of mental disorders. World Psychiatry. 2017;16:5–13.