

Physical exercise for pathological gamblers

Exercício físico para jogadores patológicos

Dear Editor,

Pathological gambling (PG) is characterized by persistent and recurrent gambling behavior despite obvious psychological, financial, and interpersonal negative consequences. Diagnostic criteria are based on criteria for substance dependence, and PG is considered a model of behavioral dependence¹.

Physical exercise has been proposed as an adjuvant therapy for patients undergoing substance dependence treatment². However, there is no study of its efficacy in PG or other behavioral dependences.

We report here on the impact of an exercise program in the maintenance of PG patients undergoing outpatient treatment. Treatment consisted of 12-15 cognitive-behavioral therapy (CBT) group sessions and psychiatric treatment of comorbidities³. The 4-week exercise program included one evaluation session followed by seven (twice-a-week) 45-minute sessions (15-minute stretching plus 30-minute running, aiming at 65% of the maximum heart rate for age) supervised by 2 physical educators and a psychiatrist. Nine out of 15 patients who had completed CBT within the prior 2 weeks or who had attended at least 60% of programmed sessions accepted to participate and 8 (5 men and 3 women, mean age = 43.8 years) completed the program.

Clinical status was evaluated by the 10-item Gambling Follow-up Scale (GFS)⁴ at baseline and at the end of the exercise program. Scores below 29 suggest active PG, scores between 29 and 33 suggest partial remission, and scores above 33 suggest complete remission. Gambling craving was evaluated by a visual-analog Likert-type scale immediately before and after each exercise session.

At baseline, two patients presented acute gambling behavior (scores of 18.3 and 25.3), two patients were in partial remission

(scores of 30.3 and 32.8), and four were in complete remission (scores ranging from 37.5 and 43.1). An analysis with Wilcoxon test demonstrated a significant variation of the GFS scores after the 4-week program ($Z = -2.52$; $p = 0.012$), with GFS scores improving for all patients. Except for one patient who remained in the acute phase (GFS = 27.3), all other subjects either reached or remained within the range of complete remission (scores between 34.5 and 43.2). Gambling craving also varied significantly before and after each exercise session ($Z = -2.17$; $p = 0.030$). Then, we calculated the mean variation of gambling craving pre- and post-exercise sessions (delta-craving). A correlation analysis between delta-craving and GFS total scores at baseline and at the end of the program showed that although delta-craving did not significantly correlate with initial GFS score ($r = 0.325$; $p = 0.43$), the correlation with final GFS score was significant ($r = 0.743$; $p = 0.035$). In a further analysis in which we compared delta-craving with each final GFS item we showed significant correlations only for items directly associated with gambling (frequency, time, expenditure, and emotional stress – r varied from 0.727 to 0.732 (p varying from 0.041 to 0.039).

Items evaluating family, leisure and financial problems did not present significant associations. However, such correlations must be cautiously interpreted, considering the shortcomings of multiple comparisons in a small sample size.

We concluded that after a standardized exercise program pathological gamblers were less likely to gamble. This reduction was specifically related to reduction of the gambling behavior *per se*. Controlled studies in larger samples are needed to compare exercise efficacy with other craving management strategies. However, exercise seems to be a promising strategy⁵ in PG treatment and potentially applicable in other behavioral dependences.

Daniela Lopes Angelo, Hermano Tavares,
Henrique Moura Leite Bottura, Monica L. Zilberman
Gambling Outpatient Unit (AMJO), Department and Institute of
Psychiatry, Universidade de São Paulo (USP),
São Paulo (SP), Brazil

Disclosures

Writing group member	Employment	Research grant ¹	Other research grant or medical continuous education ²	Speaker's honoraria	Ownership interest	Consultant/ Advisory board	Other ³
Daniela Lopes Angelo	AMJO	---	---	---	---	---	---
Hermano Tavares	AMJO	---	---	---	---	---	---
Henrique Moura Leite Bottura	AMJO	---	---	---	---	---	---
Monica L. Zilberman	AMJO	---	---	---	---	---	---

* Modest

** Significant

*** Significant. Amounts given to the author's institution or to a colleague for research in which the author has participation, not directly to the author.

Note: AMJO = Gambling Outpatient Unit of the Department and Institute of Psychiatry of the Universidade de São Paulo.

For more information, see Instructions to Authors.

References

- Weinstock J, Ledgerwood DM, Modesto-Lowe V, Petry NM. Ludomania: cross-cultural examinations of gambling and its treatment. *Rev Bras Psiquiatr.* 2008;30(Suppl 1):S3-10.
- Ferreira SE, Tufik S, Mello MT. Neuroadaptação: uma proposta alternativa de atividade física para usuários de drogas em recuperação. *Rev Bras Cien Mov.* 2001;9(1):31-9.
- Tavares H, Gentil V, Oliveira CS, Tavares AG. Jogadores patológicos, uma revisão: psicopatologia, quadro clínico e tratamento. *Rev Psiquiatr Clin.* 1999;26(4):179-87.
- Galetti AM. *Desenvolvimento e avaliação psicométrica da escala de seguimento de jogadores: uma medida de evolução para jogadores patológicos em tratamento* [dissertação]. São Paulo: Faculdade de Medicina, Universidade de São Paulo; 2006. 126 p.
- Araújo SR, Mello MT, Leite JR. Anxiety disorders and physical exercise. *Rev Bras Psiquiatr.* 2007;29(2):164-71.