

**Cross-cultural adaptation of Gambling Cognitions Inventory to the  
Brazilian Portuguese language**

Gabriel Dallegrave and Vinicius Kazuo Ueti

Department of Psychology, Dom Bosco Catholic University

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Dra. Liliana Andolpho Magalhães Guimarães & Dr. João Massuda Junior

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## **Abstract**

Gambling Disorder (GD) is the first non-substance-use behavior recognized as an addiction in the DSM-5, revolutionizing academic research on addiction maintenance. The rise of online gambling participation places new challenges for countries, especially on how effortless it is to surpass gambling prohibitions. Upcoming regulation measures being discussed at Brazil's House of Representatives are expected to increase gambling participation as it did in the USA, Norway and Spain. The increase in overall participation threatens risky populations, further impacting GD prevalence. In treatment, dropout rates in GD almost double the average of general psychotherapy. The purpose of this study is to translate the Gambling Cognitions Inventory, an instrument that tracks cognitive distortions in GD, for the sake of better assessing cognitive distortions individually, helping therapists to design more accurate interventions that can help reduce gambling addiction and dropout rates in psychotherapy.

*Keywords:* gambling disorder; online gambling; gambling regulation; cognitive distortions; translation; surveys and questionnaires.

## Introduction

Gambling disorder (GD) is characterized by constantly gambling for money despite severe negative consequences. It is the first non-substance-use behavior recognized as an addiction in the DSM-5 (APA, 2013) due to numerous similarities with substance-use disorders (SUDs), such as symptoms presentation, high comorbidity rates, and cognitive deficits (Petry, 2013).

Data from Australia, the country with the biggest average net gambling spend per adult in 2020 according to H2 (2021), shows that people who gambled online experienced harm at over twice the rate of other gamblers, 34% to 15.6%, and were more likely classified as problem gamblers with 3.9% versus 1.4% of people who not gambled online. The overall prevalence of online gambling has doubled from 8.1% to 17.5%, despite the decline in gambling participation from 64.3% in 2010/11 to 56.9% in 2019 (Hing et al., 2021).

Online wagering is shifting to mobile devices, expecting to reach 58.2% of all online bets by 2025 in Europe. Sports betting leads the online activity (41%), followed by casino (34%), and lottery (15%) (European Gaming & Betting Association, 2020). It's important to highlight that after online gambling regulations, wagering started increasing in the US (Sichel, 2020), in Norway (Engebø, 2021), and also in Spain, where GD prevalence also rose, especially among people under 26 years old (Chóliz, 2016).

The rise of sportsbetting reached the attention of Brazil's National Congress in 2018 with the establishment of a federal fixed-odds sportsbook

(currently in process of concession). In sum, one bill from the Chamber of Deputies and another Bill from the Senate are scheduled to be voted anytime, pointing out extensive gambling regulations (Maia & Picchi, 2021).

As previously shown, the newest legalization measures tend to increase overall gambling participation. While gambling availability tends to increase, vulnerable populations are risky to evolve into problem gambling or even GD, calling the attention of researchers to further discussion of gambling, including the development/validation of measures to help health professionals to face the challenge to support the treatment of people with gambling problems and GD.

### **Literature Review**

Multiple neurotransmitter systems have been implicated in GD, with many brain regions showing dysfunctions associated with disruptions or differences in several processes and functions, such as sensitivity to reward and excitement, loss-chasing behavior, stress dysregulation, and social-emotional problems (Potenza et al., 2019).

For several decades the dopaminergic system was strongly linked to reward mediation and addiction maintenance in SUDs, but unfortunately, this approach has not led to new treatments for addictions overall (Nutt et al., 2015). Despite being a major monoamine neurotransmitter, with many essential roles in brain function (Klein et al. 2018), dopamine's role in GD remains unclear; addictions need to be put in perspective along with the complex mixture of behaviors and attitudes constant with them.

GD presents high rates of comorbidity across different disorders, lead by nicotine dependence (60.1%), followed by a substance use disorder (57.5%), any type of mood disorder (37.9%), and any type of anxiety disorder (37.4%) (Lorains et al, 2011). The new DSM-5 criteria for GD appear to have resulted in a very slight reduction in psychiatric comorbidity prevalence (Nicholson et al., 2019).

Overall prevalence studies at the national level are still very limited, with only 30 countries' reports between 2000 and 2015. Despite the variability in procedures, cut-offs, and time frames, findings demonstrate that 0.1 - 5.8% of individuals meet diagnostic criteria for problem gambling across five continents, and 0.7 - 6.5% meet criteria for problem gambling during their lifetime (Calado & Griffiths, 2016).

Nevertheless, results and samples from some countries may not apply to all other nations, meaning that social and cultural differences must be considered (Medeiros et al., 2016). In Brazil, there is an overall lifetime prevalence of 1% of GD and 1.3% of problem gamblers. Approximately 12% declared gambling on a monthly basis. Being young, male, unemployed, or not pursuing further education were identified as risk factors for severe GD (Tavares et al., 2010).

The widespread online gambling associated with overall gambling legalization might certainly increase GD prevalence percentages in the forthcoming future. This scenario increases the importance of developing validated measures to help health professionals face the challenge of supporting the treatment of people with gambling problems and GD.

In this sense, this study has found five instruments developed to assess gambling problems in the Brazilian population, through extensive data search in SciELO and PePSIC databases. Three of them were adapted and validated to Brazilian population: the South Oaks Gambling Screen (SOGS) (Oliveira, 2006), the Iowa Gambling Task (IGT) (Malloy-Diniz et al., 2008), and the University Rhode Island Change Assessment (URICA) (de Souza, 2009). Two of them were national developed and validated productions: the Gambling Follow-up Scale (GFS) (de Castro, Fuentes & Tavares, 2005) and the Gambling Follow-up Scale Self-Report version (GFS-SR) (Galetti & Tavares, 2017).

Due to the scarcity of validated and cross-culturally adapted instruments to assess gambling problems and GD in the Brazilian population, this research was carried out aiming to translate the Gambling Cognitions Inventory (GCI), in its newest version (McInnes et al., 2014), to Brazilian Portuguese.

It was decided to translate the GCI due to the fact that Cognitive Behavioral Therapy (CBT) is being recognized as an effective psychological approach to support interventions designed to deal with GD, yielding multiple benefits such as reducing gambling problems, as reported in several studies. This approach might also be helpful to decrease the psychotherapy dropout rates in GD, which is on average about 38%, almost double the average dropout of general psychotherapy (Ginley et al., 2019).

It is important to highlight that the positive results achieved through CBT were not aleatory. There is compelling scientific evidence that

indicates cognitive distortions as core elements of GD (e.g. illusion of control and the gambler's fallacy) (Fortune & Goodie, 2012). This evidence suggests that instruments and approaches based on CBT have the potential to be more effective than other strategies.

### **Method**

The GCI is a 33-item Likert-type self-report scale (0= strongly disagree, 3= strongly agree) assessing 2 factors: attitude/skill (e.g., I am very confident about my gambling ability) and luck/chance (e.g., If I use special rituals I can avoid bad luck). The scale is supported by CFA-based validation.

With Cronbach's alphas ranging from 0.86 to 0.92 for the Skill/Attitude subscale and 0.83 to 0.90 for the Luck/Chance subscale, the scale showed good internal reliability. Moreover, unlike other measures that often assess both gambling-related distortions and other types of gambling-related cognitions, GCI aims specifically to gambling-related cognitive distortions.

Both scale's factors identify two of the most commonly studied fallacies in the gambling literature, the Illusion of Control for Skill/Attitude and the Gambler's Fallacy for Luck/Chance (Cowie, 2017). The scale aims to provide good clinical utility, directing therapy interventions to the most problematic cognitions.

The GCI was translated and culturally adapted following five recommendations proposed by Coster & Mancini (2015), namely: secure

permission; translation; back translation; development of final version; and evaluation of the translated instrument.

After securing permission from the Principal Investigator of the GCI project, translation was done by two independent translators to Brazilian Portuguese. Both translators were native Portuguese speakers, having graduated from college in the USA. They didn't contact each other during the process, received guidance regarding the objectives of the study, and were warned to seek semantic, idiomatic, experiential, and conceptual equivalence of the translated version.

These two translated versions were sent to the scientific coordinator of the project to carry out the reconciliation of both in a single version. This unified version was sent to two independent and bilingual translators to carry out the back-translation to the instrument's original language. The translators were a married couple, one Scottish born and the other with Doctorship made in Scotland. They were instructed to carry out a literal translation of their version.

The next phase was to send these back-translated versions back to the scientific coordinator of the project, in order to check the compatibility of the translated version with the original instrument, adjusting the Portuguese version when necessary. Both retro translators and members of the project were involved in this process.

The last step, final evaluation of the instrument could not be done due to time constraints.

## Results

After the back translation, versions clearly differed between formal and informal approaches. It was decided that the formal version would serve better for the development of the final version, satisfying the methodological characteristics of the instrument.

Generally, itens came back with the same meaning, only differing a little bit between articles and prepositions. Three items were identified with problems in the first Portuguese unified version sent to the back translators, which resulted in an incompatible meaning. These items were the 2, 23, and 30.

On item 2, "*I am certain that my time for a big win is soon*", the back-translated version was "*I am sure that my moment to get a big victory is close*". The difference between the two versions is in the words win and victory. The Portuguese version translated to "*Estou certo de que meu momento para uma grande vitória está próximo*" was reviewed to "*Estou certo de que meu momento para ganhar muito está próximo*". The term victory on the back-translation appears because of the word *vitória*, in the first Portuguese version. The term that is better suited to translate win is *ganhar* and for victory is *vitória*. In this sentence, the meaning of the two words are very similar, but win is a verb and victory is a noun.

On item 21, the expression "*will get*" has become on the back-translation "*going to*". The two forms were used to indicate the future, but "*going to*" is applied for plans or decisions made before speaking and "*will get*" for those made at the time of speaking. Will is a modal auxiliary

verb and get is the verb, and going to is a verb in the present continuous tense.

On item 23, the modal verb “*would*” was translated to the Portuguese verb “*ter*” that means “*have*”. Verb tense was “*terei*” which is equivalent to the future perfect “*I will have*” in Brazilian Portuguese. When comparing translations “*would*” was discovered to be working as a future in the past. An equivalent verb tense in Portuguese is expressed by the word “*teria*”, so the final sentence became “*Se eu esquecer um item especial em casa eu não teria tanta sorte enquanto aposto*”

On item 6 and 30, part of the sentences were translated in plural to Portuguese. Item 6, was “*nas minhas habilidades*” where the original is “*about my gambling*”. Final sentence become “*Eu sou muito confiante na minha habilidade de apostar*”. Original item 30 expression “*on a slot machine*” was translated in plural to Portuguese as it was “*on slot machines*”. The translation was corrected to “*Existem certas estratégias que podem ajudar as pessoas a ganhar na máquina caça níquel*”.

On items 16, 31, and 33 there were different words. On item 16, the word “*dwell*” in the original version, has become “*think*” in the back-translated version. On item 31, fluke has become one off and on item 33, the expression “*do well*” has become “*succeeded*”. In these situations, the word has changed but the original meaning remains. This occurs because some sentences can be synonyms or have an expression that has the same meaning. In those three cases, the sentence changed due to the words used in the translated version that are not the same but in

Portuguese these words are more common than words used in the original version.

**Table 1**

*Original version, unified translation, unified retro translation.*

| <b>Portuguese Version</b>   | <b>Original Version</b>   | <b>Back Translated Version</b>   |
|---|---|--|
| 1. Depois de perder, as pessoas devem voltar para ganhar de volta o dinheiro que perderam                             | 1. After losing, people should go back to win back the money they lost                        | 1. After losing, people should return to win their money back  |
| 2. Estou certo de que meu momento para uma grande vitória (ganhar muito) está próximo                                 | 2. I am certain that my time for a big win is soon  | 2. I am sure that my moment to get a big victory is close  |
| 3. Embora eu fique chateado quando perco, uso isso como uma oportunidade de aprendizado para aprimorar minhas apostas | 3. Although I am upset when I lose, I use it as a learning opportunity to improve my gambling | 3. Although I am upset when I lose, I use this as an opportunity of learning to improve on my gambling |
| 4. Eu sou um apostador muito habilidoso   | 4. I am a very skilled gambler  | 4. I am a very skilful gambler   |
| 5. Eu posso sentir quando eu vou ganhar   | 5. I can sense when I am going to win   | 5. I can feel when I am going to win   |
| 6. Eu sou muito confiante na minha habilidade de apostar  | 6. I am very confident about my gambling ability  | 6. I am very confident in my gambling abilities  |
| 7. Eu consigo analisar as minhas vitórias para obter estratégias que me tornem um apostador melhor                    | 7. I can analyze my wins to give me strategies to make me a better gambler                    | 7. I am able to analyse my victories to obtain strategies that make me a better gambler                |

| <b>Portuguese Version</b>   | <b>Original Version</b>   | <b>Back Translated Version</b>   |
|---|---|--|
| 8. Após perder, eu sei que posso ganhar de volta o dinheiro que perdi   | 8. After losing, I know I can win back the money I lost                                     | 8. After losing, I know that I can win back the money I lost                                     |
| 9. Eu consigo ficar a frente ou sair na mesma ao ganhar de volta o dinheiro que perdi                         | 9. I can stay ahead or keep even by winning back money I have lost                          | 9. I can stay ahead or leave even if I win back the money that I lost                            |
| 10. Eu posso dizer quando eu estou com sorte ou estou tendo um dia de sorte, e esse é um bom dia para apostar | 10. I can tell when I am lucky or I am having a lucky day, and that is a good day to gamble | 10. I can tell when I am lucky or having a lucky day and this is a good day to gamble            |
| 11. É bom procurar por sinais especiais que possam ajudar uma pessoa a ganhar                                 | 11. It is good to look for special signs that might help a person win                       | 11. It is very good to look for special signals that could help a person to win                  |
| 12. Eu perco porque estou tendo um dia ruim ou um dia sem sorte   | 12. I lose because I am having a bad or unlucky day   | 12. I lose because I am having a bad day or an unlucky day                                       |
| 13. Eu preciso manter uma atitude positiva para me ajudar a ganhar nas apostas                                | 13. I need to keep a positive attitude to help me win at gambling                           | 13. I need to keep a positive attitude to help me win at gambling                                |
| 14. Repetir determinadas frases ou pensamentos para mim mesmo vão me dar boa sorte                            | 14. Repeating certain phrases or thoughts to myself will give me good luck                  | 14. Repeating certain phrases or thoughts to myself will give me good luck                       |
| 15. As pessoas deveriam se aproveitar de momentos que estão com boa sorte, e apostar mais                     | 15. People should take advantage of times when they have good luck, and gamble more         | 15. The people should take advantage of the moments that they are with good luck and gamble more |

| <b>Portuguese Version</b>  | <b>Original Version</b>   | <b>Back Translated Version</b>   |
|--|---|--|
| 16. Eu tento não pensar nas minhas perdas e focar nas minhas vitórias  | 16. I try not to dwell on my losses and focus on my wins                                  | 16. I try not to think on my losses and focus on my victories                                    |
| 17. Eu tento me associar com pessoas que ganham nas apostas, quem eu acho que tem sorte  | 17. I try to associate with people who win at gambling, who I think are lucky             | 17. I try to associate with people who win at gambling, who I think that are lucky               |
| 18. Eu tento descobrir o porquê perdi  | 18. I try to figure out why I lost  | 18. I try to find out why I lost   |
| 19. Uma atitude vencedora vai melhorar minhas chances nas apostas  | 19. A winning attitude will improve my chances in gambling                                | 19. A winning attitude will improve my chances at gambling                                       |
| 20. Se eu usar rituais especiais, eu posso evitar a má sorte   | 20. If I use special rituals, I can avoid bad luck  | 20. If I use special rituals, I can avoid bad luck   |
| 21. Eu vou melhorar nas apostas com a prática  | 21. I will get better at gambling with practice   | 21. I am going to improve at gambling with practice  |
| 22. Se eu não tenho uma boa conexão com a máquina de caça-níqueis ou terminal de vídeo loteria (VLT), estou mais propenso a perder | 22. If I don't have good connection with the slot machine or VLT, I'm more likely to lose | 22. If I do not have a good connection with the slot machine or VLT, I have more chances to lose |
| 23. Se eu esquecer um item especial em casa eu não seria tão sortudo enquanto aposto   | 23. If I forget a certain special item at home, I wouldn't be as lucky while gambling     | 23. If I forget home a special item, I will not have so much luck while gambling                 |

| Portuguese Version  | Original Version   | Back Translated Version   |
|---|--|---|
| 24. Se eu tenho pensamentos negativos, isso contribui para a minha má sorte e perdas  | 24. If I have negative thoughts, it contributes to my bad luck and losses  | 24. If I have negative thoughts, this contributes to my bad luck and losses   |
| 25. Quanto mais eu perco, mais próximo estou de ganhar  | 25. The more I lose, the closer I am to winning  | 25. The more I lose the closer I am to winning  |
| 26. Se você está tendo uma série de derrotas, você deveria continuar apostando  | 26. If you are having a losing streak, you should keep gambling  | 26. If you are having an losing streak, you should keep gambling  |
| 27. Na roleta, uma boa estratégia é apostar em números (ou naipes ou cores) que não surgiram recentemente, já que estão para vencer | 27. In roulette, a good strategy is to bet on numbers (or suits or colours) that have not come up recently, as they are due to win | 27. In roulette, a good strategy is to bet in numbers (or suits or colour) that do not come recently, since they are about to win |
| 28. Ficar na mesma máquina aumenta as minhas chances de ganhar  | 28. Staying at the same machine increases my chances of winning  | 28. Staying on the same machine increases my chances of win   |
| 29. Quanto mais habilidoso em apostar eu me torno, mais dinheiro eu espero ganhar   | 29. The more skilled at gambling I become, the more money I expect to win  | 29. The more skillful at gambling I become the more I expect to win   |
| 30. Existem certas estratégias que podem ajudar as pessoas a ganhar na máquina caça níquel  | 30. There are certain strategies that can help people win on a slot machine  | 30. There are certain strategies that can help people win at the slot machines  |
| 31. Quando eu ganho nas apostas, eu sei que é apenas um acaso *   | 31. When I win at gambling, I know that it is just a fluke *   | 31. When I win in the gambling, I know that it is just <i>one off (a random case)</i> *   |

| <b>Portuguese Version</b>   | <b>Original Version</b>   | <b>Back Translated Version</b>   |
|---|---|--|
| 32. Você tem uma chance melhor de se tornar rico apostando do que trabalhando | 32. You have a better chance of becoming rich by gambling than by working | 32. You have a better chance at getting rich by gambling than by working |
| 33. Você deve trabalhar duro nas apostas para ser capaz de se dar bem         | 33. You must work hard at gambling to be able to do well                  | 33. You must work hard at gambling to be able to succeeded               |

\* (31) is a reverse scored item.

### **Conclusion**

The rise of online gambling places a big challenge for governments in general, especially for those countries with extensive prohibition measures to gambling. The internet gives gambling outstanding availability worldwide and there are no borders to delimit its reach.

Any gambler in the world can, for example, select a Virtual Private Network (VPN) provider and easily gamble on any offshore website available, with a high degree of privacy. Brazilian law doesn't even account for the existence of these offshore gambling companies. Even if it was "aware" of their existence, how would they track and punish gambling activity online?

The internet spread potential along with the expected increase in participation after regulation measures are set, may lead to a sharp rise in participation short term, threatening risky populations as never before in history.

While GCI aims to better assess the most prominent cognitive distortion affecting individuals with already known gambling problems, it

serves as a powerful tool for therapists designing interventions to reduce gambling harm. It may also be much helpful in reducing the high dropout rates, as interventions can be more aligned to individual traits.

Having GCI available in another language empowers its impact and reach. Even if GD prevalence rates remain the same in Brazil but participation keeps rising, much more people will be harmed despite prevalence rates apparently remaining stable.

The process of translation had several limitations, such as absence of language professionals in translation, the retro translation being a married couple which plausible compromised the full independence of versions and final evaluation of the process not being run due to time constraints.

Further research can validate this work or look over the onset process, where risk populations start gambling and lose control. Cognitive distortions solidify over time until the severe condition arises. Tracking early signs of distortions, would help tremendously in stopping the chain of GD development.

## References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). <https://doi.org/brfw>
- Calado, F., & Griffiths, M. D. (2016). Problem gambling worldwide: An update and systematic review of empirical research (2000–2015). *J Behav Addict*, 5(4), 592–613. <https://doi.org/f9kfw>
- Chóliz, M. (2016). The Challenge of Online Gambling: The Effect of Legalization on the Increase in Online Gambling Addiction. *J Gamb Stud*, 32, 749–756. <https://doi.org/f8pgcg>
- Coster, W. J., & Mancini, M. C. (2015). Recommendations for translation and cross-cultural adaptation of instruments for occupational therapy research and practice. *Rev Ter Ocup Univ São Paulo*, 26(1), 50-57. <https://doi.org/gmfjjz>
- Cowie M. E., Stewart S. H., Salmon J., Collins P., Al-Hamdani M., Boffo M., Salemink E., de Jong D., Smits R., & Wiers R. W. (2017). Distorted Beliefs about Luck and Skill and Their Relation to Gambling Problems and Gambling Behavior in Dutch Gamblers. *Front Psychol*, 8, 2245. <https://doi.org/gcr3cj>
- de Castro, V., Fuentes, D., & Tavares, H. (2005). The Gambling Follow-up Scale: Development and Reliability Testing of a Scale for Pathological Gamblers under Treatment. *Can J Psychiatry*, 50(2), 81–86. <https://doi.org/g3vj>

- de Souza, C. C. (2009). *Motivação para mudança de comportamento no jogo patológico: tradução, adaptação e validação da "University Rhode Island Change Assessment (URICA)"* [Doctoral dissertation, Pontifícia Universidade Católica do Rio Grande do Sul]. TEDE PUCRS. <http://tede2.pucrs.br/tede2/handle/tede/681>
- Engelbø, J., Torsheim, T., & Pallesen, S. (2021) Regulatory Measures' Effect on Gambling Participation: Experiences From Norway. *Front Psychiatry*, 12, 672471. <https://doi.org/g2r3>
- European Gaming & Betting Association. (2020). *European Online Gambling Key Figures 2020 Edition*. EGBA. <https://bit.ly/3GpgJWR>
- Fortune, E. E., & Goodie, A. S. (2012). Cognitive distortions as a component and treatment focus of pathological gambling: a review. *Psychol Addict Behav*, 26(2), 298–310. <https://doi.org/frtkq4>
- Galetti, A. M., & Tavares, H. (2017). Development and validation of the Gambling Follow-up Scale, Self-Report version: an outcome measure in the treatment of pathological gambling. *Rev Bras Psiquiatr*, 39(1), 36-44. <https://doi.org/f9s8m4>
- Ginley, M. K., Rash, C. J., & Petry, N. M. (2019). Psychological Interventions in Gambling Disorder. In Heinz, A., Romanczuk-Seiferth, N., & Potenza M. N. (Eds.), *Gambling disorder*. (pp. 181-194). Springer. <https://doi.org/g657>
- Goodie, A. S., & Fortune, E. E. (2013). Measuring cognitive distortions in pathological gambling: Review and meta-analyses. *Psychol Addict Behav*, 27(3), 730–743. <https://doi.org/f5ccg4>

- Goodie, A. S., & Fortune, E. E., Shotwell, J. J. (2019). Cognitive Distortions in Disordered Gambling. In Heinz, A., Romanczuk-Seiferth, N., & Potenza M. N. (Eds.), *Gambling disorder*. (pp. 49-71). Springer.  
<https://doi.org/g656>
- Hilbrecht, M. (Ed.). (2021). *Prevention and education evidence review: gambling-related harm*. Guelph, Canada: Greo. <https://doi.org/g3c6>
- Hing, N., Russell, A. M. T., Browne, M., Rockloff, M., Greer, N., Rawat, V., Stevens, M., Dowling, N., Merkouris, S., King, D., Breen, H., Salonen, A., & Woo, L. (2021). *The second national study of interactive gambling in Australia (2019-20)*. Melbourne: Gambling Research Australia.  
<https://bit.ly/3BjC3Jl>
- H2 Gambling Capital. (2021, October). *Major Nations Average Net Gambling Spend per Adult 2020*. <https://h2gc.com/premium>
- Klein, M., Battagello, D. S., Cardoso, A. R., Hauser, D. N., Bittencourt, J. C., & Correa, R. G. (2018). Dopamine: functions, signaling, and association with neurological diseases. *Cell Mol Neurobiol*, 39, 31-59.  
<https://doi.org/gwc6>
- Lorains, F. K., Cowlshaw, S., & Thomas, S. A. (2011). Prevalence of comorbid disorders in problem and pathological gambling: Systematic review and meta-analysis of population surveys. *Addiction*, 106(3), 490–498.  
<https://doi.org/bg8kd4>
- Maia, L. F., & Picchi, F. A. (2021). Brazil. In C. Rohsler (Ed.), *The Gambling Law Review* (6th ed., pp. 102-116). Law Business Research Ltd.  
<https://bit.ly/3Cpx5wk>

- Malloy-Diniz, L. M., Leite, W. B., de Moraes, P. H. P., Humberto Correa, H., Antoine Bechara, A., & Fuentes, D. (2008). Brazilian Portuguese version of the Iowa Gambling Task: transcultural adaptation and discriminant validity. *Rev Bras Psiquiatr*, *30*(2), 144-148.  
<https://doi.org/bcwzx>
- McInnes, A., Hodgins, D. C., & Holub, A. (2014). The Gambling Cognitions Inventory: Scale development and psychometric validation with problem and pathological gamblers. *Int Gamb Stud*, *14*(3), 410-431.  
<https://doi.org/gwc7>
- Medeiros, G. C., Leppink, E. W., Redden, S. A., Yaemi, A., Mariani, M., Tavares, H., & Grant, J. E. (2016). A cross-cultural study of gambling disorder: a comparison between women from Brazil and the United States. *Rev Bras Psiquiatr*, *38*(1), 53-57. <https://doi.org/f8g3hw>
- Nicholson, R., Mackenzie, C., Afifi, T. O., Keough, M., & Sareen, J. (2019). An Examination of Comorbid Psychiatric Disorders in Disordered Gamblers Versus Other Substance-Related Disorders. *J Gamb Stud*, *35*, 829-847. <https://doi.org/g2r7>
- Nutt D. J., Lingford-Hughes, A., Erritzoe, D., & Stokes, P. R. (2015). The dopamine theory of addiction: 40 years of highs and lows. *Nat Rev Neurosci*, *16*(5), 305-12. <https://doi.org/f68xq7>
- Oliveira, M. P. M. T. (2006). *Validação da Escala South Oaks Gambling Screen (SOGS) em população brasileira* [Doctoral dissertation, Universidade de São Paulo]. Biblioteca Digital de Teses e Dissertações da USP. <https://doi.org/g3td>

- Petry, N. M., Blanco, C., Auriacombe, M., Borges, G., Bucholz, K., Crowley, T.J., Grant, B. F., Hasin, D. S., O'Brien, C. (2014). An Overview of and Rationale for Changes Proposed for Pathological Gambling in DSM-5. *J Gambl Stud*, 30, 493–502. <https://doi.org/g66b>
- Potenza, M.N., Balodis, I.M., Derevensky, J., Grant, J. E., Petry, N. M., Verdejo-Garcia, A., & Yip, S. W. (2019). Gambling disorder. *Nat Rev Dis Primers*, 5(51). <https://doi.org/fbm2>
- Sichel, A. R. (2020). *The Economic and Social Effects of Legalized Sports Gambling* [Thesis, The Ohio State University]. Knowledge Bank. <http://hdl.handle.net/1811/91813>
- Tavares, H., Carneiro, E., Sanches, M., Pinsky, I., Caetano, R., Zaleski, M., & Laranjeira, R. (2010). Gambling in Brazil: lifetime prevalences and socio-demographic correlates. *Psychiatry Res*, 180, 35-41. <https://doi.org/bvf8h8>