

# The WAGER, Vol. 18(3) - Three roads to pain: Testing the pathways model for problem gambling

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During 2002, Blaszczynski and Nower proposed that there are three pathways to problem and pathological gambling. In their first pathway, problem gambling develops as a matter of behavioral conditioning, not as a matter of psychopathology. In their second pathway, factors such as mood disorders, poor coping skills, and traumatic life events contribute to the production of an “emotionally vulnerable gambler” who gambles to relieve pain (Blaszczynski & Nower, 2002). In their third pathway, emotional vulnerability combines with impulsivity and attention and personality disorders to create many problems, including gambling. Today’s WAGER reports on research (Nower, Martins, Lin, & Blanco, 2012) that searches for symptom clusters corresponding to these three pathways using data from the National Epidemiological Survey on Alcohol and Related Conditions.

## Methods

- The study used data from the U.S. National Epidemiological Survey on Alcohol and Related Conditions (NESARC) (Grant & Dawson, 2006).
  - The data were reduced to include only and all disordered gambling participants ( $n = 581$ ).[\[1\]](#)
  - The researchers analyzed participants’ responses to questions about alcohol use, tobacco use, other medications and drugs, psychological disorders, family history of addiction and psychological

problems, gambling, medical conditions and victimization.

- The researchers used [latent class analysis](#) to identify subgroups within the NESARC disordered gambling population based on a combination of 17 clinical indicators.
  - They evaluated models with between 1 and 5 classes to identify the optimal model (i.e. the model that best fit the observed data).
  - The researchers identified the optimal model by examining statistics (i.e. [log-likelihood statistics](#), [AIC](#) and [BIC](#))..

## Results

- Out of the five models, the optimal one was the one with three classes.
- The probability that someone in Class 1 (n = 295) had a prior-to-past-year experience with a substance use disorder was 55%.

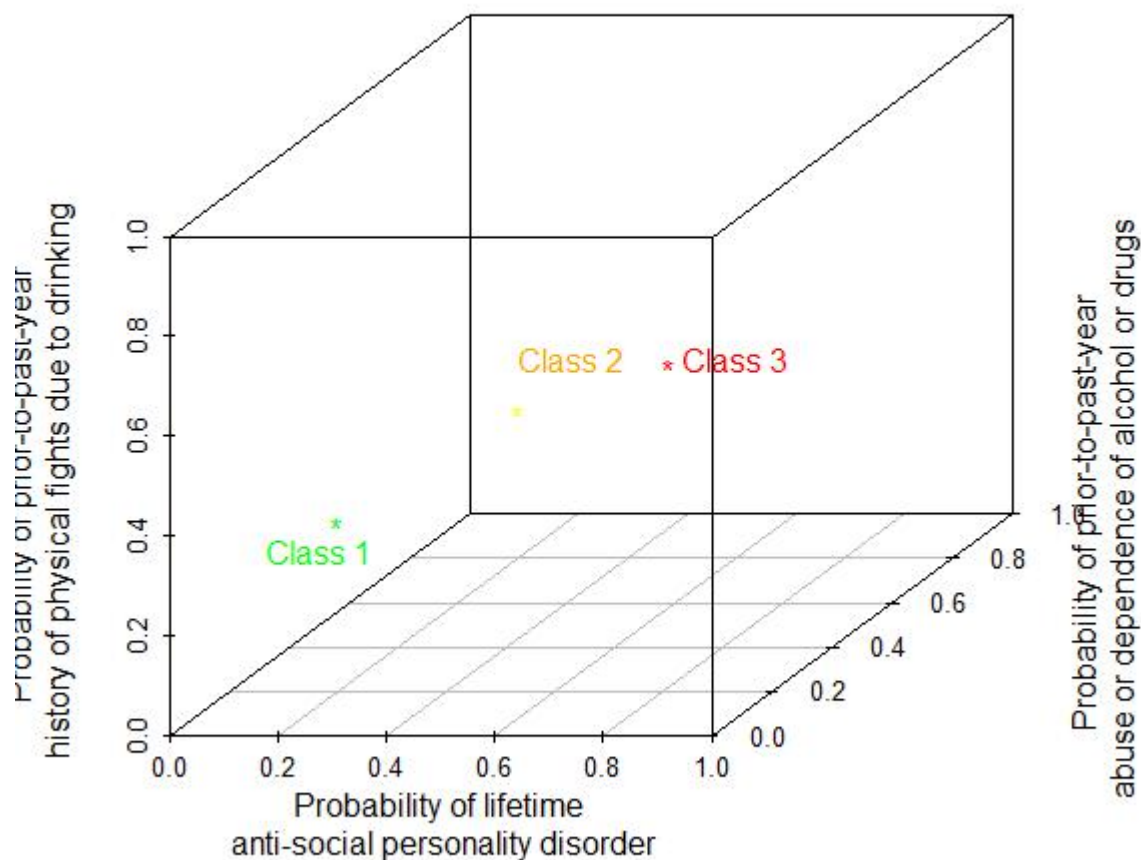
The probabilities for most other indicators of psychological problems were under 10%. Participants in this group reported relatively high mental health functioning.

  - Based on these clinical indicators, researchers suggested that Class 1 corresponds to the first Blaszczynski and Nower (2002) pathway.
- The probability that someone in Class 2 (n = 117) had a prior-to-past-year experience with a substance use disorder was 74%.

Other probabilities of note were those of physical fights due to drinking (33%), anti-social personality disorder (23%), panic disorder or general anxiety disorder (22%), and onset of the first episode of depression in the past year (22%).

- Because of the elevated probabilities of signs of emotional vulnerability, the researchers suggested that Class 2 was generally consistent with the second Blaszczynski and Nower (2002) pathway.
- The probability that someone in Class 3 (n = 169) had a prior-to-past-year experience with a substance use disorder was 78%. Additionally, the probabilities of a history of antisocial personality disorder, past-year substance abuse disorder, and involvement in drinking-related physical fights were 49%, 43% and 40%, respectively.
  - Class 3 had the highest probabilities out of the three classes for 12 out of the 17 indicators. The researchers drew parallels between Class 3 and the third Blaszczynski and Nower (2002) pathway.
- Figure 1 is a 3-dimensional graph with the probabilities for prior-to-past-year alcohol abuse, prior-to-past-year history of drinking-related physical fights, and lifetime anti-social personality disorder, for the three classes. These three example indicators and the three locations in space illustrate the differences between Class 1, Class 2, and Class 3.

**Figure 1:** Probabilities of lifetime anti-social personality disorder, prior-to-past-year abuse or dependence of alcohol or drugs, and prior-to-past-year history of physical fights due to drinking, for each of the three classes. Adapted from Nower et al., 2013.



## Limitations

- It is not possible to test some aspects of the three-pathway model. For example, Blaszczynski and Nower (2002) proposed that the pathways are dependent on the age at which individuals are introduced to gambling. However, these data was not part of the NESARC.
- Likewise, it is not possible to determine from the data which symptoms of drug abuse and other issues preceded the onset of gambling problems and which ones followed it. This order of events is necessary for distinguishing among the pathways.

## Conclusion

The three classes found in the latent class analysis somewhat correspond to the three pathways outlined in Blaszczynski and Nower's (2002)

earlier work. They represent different levels of complicating factors that can interfere with or obstruct attempts at intervention or treatment for disordered gambling. If clinicians can identify their patients' pathways, they might be able to adapt or tailor different treatment programs to their own special needs and personalities.

- Matthew Tom

What do you think? Please use the comment link below to provide feedback on this article.

## References

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[1]

All participants were asked if they had gambled at least five times in any 1 year of their lives. Those who responded affirmatively and then met three or more DSM-IV criteria for pathological gambling were classified as disordered gambling participants.