

The WAGER Vol. 9(25) - What's Underneath? The Role of Negative Affect in the Tobacco/Gambling Link

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In countless movies, paintings, and in many casinos, smoking and gambling seem to go hand in hand. This might seem like a mere aesthetic coincidence, but researchers have found that there is a link between problem gambling and smoking. For example, a past WAGER (8(5)) discussed a study by Petry & Oncken (2002) that found the smoking rate among people in treatment for problem gambling to be significantly higher than in the general population. Their results even show that daily smokers tend to have more severe gambling problems than non-daily smokers. This week's WAGER presents the results of a study by Rodda, Brown, and Phillips (2004) that examines the role of negative affect in tobacco use and gambling. The authors define negative affect as "self-reported negative mood states, such as anxiety or depression."

The authors surveyed Electronic Gaming Machine (EGM) patrons in five clubs and hotels in the western and southeastern regions of Melbourne, Australia. These venues had an average of 58.2 EGMs in each establishment (range = 20-90). To obtain their sample, the researchers positioned themselves in the foyer of the venues at various times on Fridays, Saturdays and Sundays, during the course of six weeks. Researchers only approached customers who made eye contact with them on their way into the establishments and informed participants that their participation in the study was voluntary and entirely confidential. Only 20% of those approached by researchers participated in the study: 35 males and 46 females ages 18 to 82 (mean age = 40; SD = 15.96). Participants completed three questionnaires: (1) the Tobacco Dependence Scale (TDS) used to assess tobacco dependence (Kawakami et al., 1999); (2) the South Oaks Gambling Screen (SOGS) used to screen for problem gambling (Lesieur & Blume, 1987); and (3) the Trait Scale of the State-Trait Anxiety Inventory (STAI) used to measure negative affect (i.e., depression and anxiety) (Spielberger et al., 1970). The research instrument also contained

demographic information, but the authors found that these variables were not associated with smoking, anxiety or gambling. Therefore they excluded this information from their analysis.

The authors report that the prevalence rate for smoking in the general population of Victoria, Australia is 25%; in this sample of gamblers, the prevalence was 59.3% (95% CI = 48.3, 70.2). Twenty-nine participants (35.8%) scored above the SOGS cut-off for probable pathological gambling (i.e., affirmative responses to 5 or more items) and, of these, 24 (82.8%, CI = 68.2 - 97.4) were smokers and 5 (17.2%, CI = 2.6-31.8) non-smokers. Of the non-problem gamblers, 24 (46.2%, CI = 32.1 - 60.2) were smokers and 28 (53.8%, CI = 39.8 - 67.9) were non-smokers.

Pearsons and point-biserial correlations showed that SOGS scores predicted both smoking status and tobacco dependence scores. Anxiety scores positively correlated with smoking status, SOGS scores, and tobacco dependence scores (see Table 1). To determine whether anxiety mediates the smoking/gambling link, the authors conducted ANOVAs with and without anxiety as a covariate. They suggest that a significant drop in the magnitude of the F statistic would reveal that anxiety drives the relationship between smoking and gambling. Testing this logic, the F value dropped from 14.9 to 6.45

when anxiety was used as a covariate: a statistically significant difference ($F(1, 78) = 47.15, p < 0.001$).

Table 1: Pearson and Point-Biserial Correlations between Study Variables (derived from Rodda et al, 2004)

	<i>Anxiety</i>	<i>SOGS</i>
Smoking Status ^a	0.40**	0.30**
Tobacco Dependence (n = 48)	0.37**	0.30**
SOGS		0.54**

a 1 = non-smoker, 2 = smoker. * $p < 0.05$ (one tailed), ** $p < 0.01$ (one-tailed).

The authors found a strong relationship between gambling and smoking, and argue that negative affect could be an underlying cause for gambling and smoking co-occurrence. The authors acknowledge that gambling could cause negative affect due to adverse financial consequences and the impact problem gambling can have on families and friends, and that there could be another, unknown, variable responsible for this correlation. They suggest that longitudinal

research is needed to determine the order of events.

There are other limitations to the study. The authors report only a 20% participation rate, which could limit our ability to generalize the results to a general population of gamblers. Similarly, participants were selected based on whether they made eye contact with the researcher in the foyer: this sample might not be representative of gamblers in general. Furthermore, this study only evaluated data relating to EGM players. Though there is evidence that this data could overlap with the general problem gambling population the authors suggest that more research is needed to confirm this.

Despite these limitations, this study suggests that both smoking and gambling are related to anxiety. If accurate, this observation might impact future strategies for treating problem gamblers that smoke. The authors note that, though anti-smoking interventions have been successful in reducing smoking in the general population, there are groups for whom these interventions seem to be less effective. If both smoking and problem gambling indeed have a similar cause (i.e., negative affect), the authors suggest the need to address these problems simultaneously by providing smoking prevention and cessation programs through already existing programs that provide services to problem gamblers. Although it is important to avoid taking on too much at one time, it is equally important to treat co-occurring problems simultaneously because each problem can exacerbate the other. Although this call to treatment might be premature, the relationship between smoking, negative affect, and problem gambling warrants further research, particularly prospective studies that test the causal nature of the relationship.

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