Gambling with God: The Effect of Gambling on Religious and Spiritual Struggles

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6th January 2021

Word Count: 5947

Author Note

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Abstract

Religion and spirituality are often related to various addictive behaviors, such as substance use disorders, excessive internet pornography use, and Gambling Disorder. However, presently, very few published articles have considered the relationship between Gambling Disorder and negative aspects of religion and spirituality such as religious and spiritual struggles. This study aimed to better understand how problem gambling severity may be uniquely associated with religious and spiritual struggles, both cross-sectionally and over time. The study used secondary data from a longitudinal MTurk survey (n=764; follow-up n=342) and controlled for neuroticism, age, gender, income, and gambling preference. Problem gambling severity was uniquely associated with several types of religious and spiritual struggles at baseline and most struggles at a six-month follow-up, even after controlling for baseline levels of such struggles. Further research is necessary to understand the nature of these links and how they might inform clinical care.

Keywords: religion, spirituality, problem gambling, religious and spiritual struggles, Gambling Disorder.

Gambling with God: Gambling and Religious and Spiritual Struggles

Gambling Disorder (GD) is a widely recognized behavioral addiction which negatively affects various aspects of well-being and predicts a range of comorbidities (see Lorains et al., 2011). Therefore, understanding how GD interacts with other facets of well-being requires sustained research interest. Religious/spiritual functioning is an important domain of life experience for a majority of humans (Pew Research Center, 2014). Yet, to date, there is little research examining how problem gambling might influence religious well-being. The present work investigates this by examining GDs impact on religious/spiritual functioning both immediately and longitudinally.

Gambling within Religious and Spiritual Traditions

Most religious texts and communities engage with the problems and effects of substance and gambling addictions both explicitly (Proverbs 20:1) and implicitly. The modern Catholic tradition suggests gambling is not inherently wrong, but harming others via gambling or becoming addicted is morally unacceptable (Catholic Catechism: 2413). The United Methodist Church's Social Principles strongly condemns gambling while reminding followers to help those with addictions (United Methodist Church, 2013). Islamic teaching views gambling as a work of Satan and a sin punishable on Judgment Day (Sura Ma'idah 5:90-91). In the Jewish tradition, gambling done professionally, compulsively, or for personal gain is condemned (Mishnah Sanhedrin 3:3). Hindu scriptures warn against gambling and the negative consequences which may arise, both for the gambler and those around them (Rig Veda Mandala 10, Sukta 34). Buddhist teachings found in the Sigalovada Sutta also speak of the dangers surrounding gambling.

Given such religious prohibitions against gambling across faith traditions, it is not surprising that many studies have shown that religious attendance and belief salience predict

lower levels of compulsive gambling behaviors (e.g. Braun et al., 2016; Casey et al., 2011; Mutti-Packer et al., 2017) and that religious denomination may be protective against developing problems with gambling (Braun et al., 2016; Eitle, 2011; Krause et al., 2017). Further, religion/spirituality may be key aspects of the recovery process from gambling related problems, as seen in research with those in Gambler's Anonymous (GA; e.g. Walsh, 2001), a 12-step recovery organization that centers an individual's spirituality as a key element of recovery.

Despite the above findings indicating that religion/spirituality may be a buffer against gambling problems, more recent research suggests the links between gambling and religion are more nuanced. Higher religiousness may be linked to greater gambling related cognitive distortions in some samples (Kim et al., 2018), suggesting that there are likely complex relationships between gambling behaviors, GD, and religious/spiritual functioning. One potential relationship that has been relatively ignored in prior literature is the influence of gambling on religious and spiritual struggles.

Religious and Spiritual Struggles

Religion/spirituality can present unique challenges such as religious and spiritual struggles (RSS; e.g., Exline et al., 2014). Prior work (Exline et al., 2014) has noted that *divine struggles* refer to negative emotions about or toward a deity; *demonic struggles* focus feelings of concern about attacks from evil spirits; *interpersonal struggles* are focused on feelings of conflict and antipathy toward religious adherents; *moral struggles* refer to feelings of struggle around right and wrong; *doubt struggles* are feelings of distress about religious doubts; and *ultimate meaning struggles* are difficulties with feelings of purposelessness or lack of meaning. Importantly, RSS are predictors of a variety of problems, such as anxiety and depression (Stauner et al., 2016; Wilt et al., 2018), higher mortality rates in chronically-ill patients (Pargament et al., 2004), poorer recovery from illness (Fitchett et al., 1999), more psychological

and mental health problems (Harris et al., 2012), and neuroticism (e.g. Grubbs et al., 2016; Wilt et al., 2017). These results suggest that RSS are indicators of lower psychological and physical well-being overall, and that they may drive distress and decreased psychological health (for a review see: Exline, 2013).

Religious and Spiritual Struggles and Addiction

Past work suggests that RSS are associated with addiction (e.g. Johnson et al., 2008; Krause et al., 2017), especially substance use disorders. For example, negative religious coping is linked to difficulties maintaining abstinence (Medlock et al., 2017) and can be a barrier to treatment (Puffer et al., 2012). Additionally, relationships between RSS and problem drinking seem to be stronger than the relationships between problem drinking and religious practices (Krause et al., 2017). Similarly, RSS are also linked with compulsive sexual behaviors (Griffin et al., 2016; Hook et al., 2015) and problematic pornography use (Grubbs et al., 2017), with the latter relationships being evident longitudinally as well. Collectively, these findings suggest addictions—both substance related and behavioral—are associated with greater concurrent and longitudinal experience of RSS.

Despite the above findings, relatively little work has focused on the intersection of RSS and GD. One prior study found preliminary associations between RSS and gambling addiction (Faigin et al., 2014). However, this work was a cross-sectional study of undergraduates only. Another more recent work (Gutierrez et al., 2020) demonstrated that there were relationships between higher RSS and pathological gambling in a clinical sample of U.S. veterans. Specifically, this research noted strong associations between gambling related problems and interpersonal, moral, ultimate meaning, and doubt struggles. However, these findings were limited to a very unique population (U.S. veterans receiving inpatient treatment for diagnosed GD).

The Current Study

Building on prior research, this study aims to understand the relationship between the severity of problematic gambling and RSS in a more general sample of U.S. adults and to test these relationships over time. Previous cross-sectional research has shown that gambling is related to RSS (Faigin et al., 2014; Gutierrez et al., 2020). Building on this, we expected that problem gambling severity would be related to RSS and this relationship would continue 6 months later. That is, we were interested in examining whether or not baseline levels of problem gambling were uniquely related to RSS over time, even when baseline levels of RSS were held constant. Rather than focusing on change in RSS, our primary aim was to simply determine whether or not problem gambling was related to RSS over time. Furthermore, in designing the present work, we noted that, as previously reviewed, neuroticism is a known correlate of both gambling related problems and self-reported difficulties in religious/spiritual life (i.e. RSS; Grubbs et al., 2016; Potenza et al., 2006; Wilt et al., 2017). Therefore, we controlled for neuroticism in all analyses.

Method

Participants and Procedure

This work made use of a pre-existing dataset, collected as a part of a larger project related to GD and Post-traumatic Stress Disorder (for full details see: https://osf.io/n29xw/). Participants from the U.S. who self-reported gambling in the past year (N=881 adults) were recruited using Amazon's Mechanical Turk (MTurk) online labor marketplace through the TurkPrime data acquisition platform (Litman et al., 2017). Respondents were compensated $7.00 for their participation. Only those who persevered through the entire study, completing the South Oaks Gambling Screen (SOGS), the RSS scale, and the baseline demographic measures (gender, age, annual income, neuroticism, and participation in online, chance, or skill-based games) were

included, leaving a final sample of 764 participants (final inclusion rate=86.7%). Six months after the initial survey, participants were invited to complete a follow-up study. All 764 participants were contacted, of which 342 completed all follow-up measures (retention rate=44.8%). After completing these follow-up measures, participants were compensated $5.00 via the MTurk marketplace. Demographics of participants from both time points can be found in Table 1.

This work was exempt from review by the authors' Institutional Review Board because it solely utilized secondary data. Of note, portions of this data have been examined in prior publications (Grubbs et al., 2018; Grubbs, Chapman, et al., 2019; Grubbs & Chapman, 2019; Grubbs & Rosansky, 2019). However, no prior works based on this data have examined the role of gambling in the prediction of religious/spiritual functioning.

Multivariate Analysis of Variance (MANOVA) revealed no differences on baseline measures of key variables (RSS and problem gambling severity) between those who completed the follow-up and those that did not (Wilk's λ=0.964, F[13, 329]=0.949, p=.502). Therefore, all those who completed the baseline measures were included in the baseline analyses, regardless of whether they completed the follow-up measures.

Measures

Table 2 shows means, standard deviations, ranges, and internal consistency values for neuroticism, SOGS and each RSS subscale at baseline and follow-up.

Problem Gambling Severity. Problem gambling severity was assessed using the South Oaks Gambling Screen (SOGS; Lesieur & Blume, 1987). The SOGS contains 21-items, of which only 20 are scored, asking participants questions such as "Have people criticized your gambling?" and "Did you ever gamble more than you intended to?". Responses consistent with

GD were given a value of 1. Responses were summed and ranged from 0 to 20.[1]

Religious and Spiritual Struggles. The 26-item RSS scale (Exline et al., 2014) includes six subscales (Divine: 5 items, Demonic: 4 items, Interpersonal: 5 items, Moral: 4 items, Ultimate Meaning: 4 items, and Doubt: 4 items) which were analyzed separately for this study, similar to other studies looking at addiction and RSS (e.g. Stauner et al., 2019). Participants rated each statement from 1 (*not at all*) to 5 (*a great deal*), and mean scores were calculated for each of the subscales.

Neuroticism. The International Personality Inventory Pool NEO 120 (IPIP-NEO-120; Maples, Guan, Carter, & Miller, 2014) was included as a measure of neuroticism. The six facet scores of the Neuroticism index (Anxiety, Anger, Depression, Self-consciousness, Immoderation, and Vulnerability) were averaged to create a composite Neuroticism scale score.

Type of Gambling. Participants were asked to indicate their preferred method and type of gambling. Participants were coded as gambling online if they responded that they had most often gambled online in the past 12 months, all others were coded as not primarily gambling online. Participants were additionally coded as either primarily preferring chance games (i.e., the lottery, bingo, dice, slots, tabs, keno, scratch-offs), skill-based games (i.e., played cards, bet on horse/dog races, sports betting, prop betting, stocks, fantasy sports), or both chance-based and skill-based games equally (equal preference).

Plan for Analyses

For all variables, we first computed descriptive statistics and Pearson correlations. To test key relationships, we followed the same analytic strategy employed in past work on behavioral addiction and RSS (e.g. Grubbs et al., 2017). We first conducted a series of cross-sectional

[1] Authors also analysed the data after excluding all individuals who reported no problem gambling (SOGS<1), leaving a sample size of 602. These results (available at: https://osf.io/srvd7/) were very similar to the results presented here, thus we have presented those with the highest power.

hierarchical regressions between key predictors at Time 1 and each RSS at Time 1. In the first step of the regressions, we included neuroticism, gender, age, annual income, and preference for online, chance, or skill-based games as control variables. Baseline levels of problem gambling severity (using the SOGS) was entered in the second step.

Again consistent with prior work (Grubbs et al., 2017), we then sought to examine the unique role of gambling problems in predicting each RSS score at Time 2, while holding the same RSS scores at Time 1 constant, using hierarchical regressions. Given that only two time-points were available, that the variables may not be stable over time, and that our aim was to determine the unique role of gambling problems in predicting RSS over time, rather than evaluating the effect of an intervention or change, such a residualized change approach is adequate (Castro-Schilo & Grimm, 2018; Gollwitzer et al., 2014). In the first step of these regressions, we included the control variables and baseline levels of the RSS being predicted.[2] In the subsequent step, baseline levels of problem gambling severity were entered.

Results

Although this study utilized the whole sample and aimed to use any level of reported gambling problems, most participants did not report experiencing clinically significant levels of problem gambling. Based on previously established cut-off points for clinically significant gambling problems on the SOGS (Goodie et al., 2013), 27% scored above a liberal cut-off of 5, 15% scored above a cut-off of 8, and 6% scored above a cut-off of 12, which has been suggested for MTurk samples. These percentages are slightly above rates found in the general population (e.g. 2.7%-5.6%: Welte et al., 2015).

[2] Authors also analysed the RSS at Time 2 after including all RSS at baseline in step 1 (Supplementary Table 5: https://osf.io/srvd7/), results of which were similar to those presented here.

Correlational Analyses

Table 2 shows correlations between baseline levels of neuroticism and problem gambling severity, and all six RSS at both time points.

Analyses revealed small positive correlations between problem gambling severity and neuroticism. Results showed medium-to-large positive correlations between the various RSS and between RSS at baseline and follow-up. Each RSS correlated highly and positively with later reports of the same RSS. Neuroticism was positively correlated with all RSS at both time points. Furthermore, problem gambling severity demonstrated small-to-medium positive correlations with all RSS at both time points.

Hierarchical Regressions

Baseline. Table 3 shows standard regression estimates (i.e., beta weights) and full regression results for all hierarchical regressions with baseline data.

Across all six struggles, neuroticism emerged as a significant predictor in the first step of the regression. In the subsequent step, SOGS scores emerged as a significant predictor for all struggles, accounting for 2.4% (interpersonal struggles) to 10.4% (demonic struggles) of unique variance above control variables.

Longitudinal. Table 4 shows standard regression estimates (i.e., beta weights) and full regression results for all follow-up level hierarchical regression analyses.

Across all six follow-up struggles, neuroticism (except for demonic struggles) and baseline levels of the same struggle emerged as significant predictors in the first step of the regression. In the subsequent step, SOGS scores emerged as a significant predictor for all struggles except ultimate meaning struggles, accounting for 0.6% (interpersonal struggles) to 2% (doubt struggles) of unique variance above control variables and baseline levels of the same struggle.

Discussion

This work aimed to better understand the relationship between gambling and RSS in the U.S., cross-sectionally and longitudinally. Problem gambling severity was significantly and uniquely associated with all six RSS at baseline and all RSS, except ultimate meaning struggles, at the six-month follow-up. Moreover, raw correlations between problem gambling and RSS at both baseline and follow-up were highly comparable, suggesting robust and consistent associations between these domains over time.

Behavioral Addictions and Religious and Spiritual Struggles. Prior works have shown that, with regards to addiction, value inconsistent behaviors often lead to a variety of intrapersonal problems (e.g. Grubbs, Kraus, et al., 2019). For example, previous research has found that perceived problems with internet pornography predicted divine, moral, and interpersonal struggles cross-sectionally and moral and interpersonal struggles longitudinally (Grubbs et al., 2017). The present study extends those findings to another domain of behavioral dysregulation: problem gambling. Moreover, this study found links between problem gambling and other RSS over time (i.e., not just moral and interpersonal struggles).

Previously identified correlations specifically between gambling and divine RSS (Faigin et al., 2014; Gutierrez et al., 2020) were replicated here. This study extends these prior works finding that most of these relationships continued at a six-month follow-up. This suggests the relationship between gambling and RSS persists over time and may provide preliminary evidence for potential causal pathways. Although a two-time-point analysis does not allow us to draw causal inferences, the longitudinal nature of the findings suggest a robust relationship between these two domains. Additionally, the online sample of adults used in this study increases generalizability of these results over prior works which were limited to either undergraduates (Faigin et al., 2014) or treatment seeking U.S. Armed Forces veterans (Gutierrez et al., 2020). In

sum, the findings of the present work, taken alongside the cross-sectional, longitudinal, and clinical samples discussed above, suggests there are important links between self-reported addictive behaviors and the experience of RSS.

Implications

Previous research suggests that problem gambling can cause distress in multiple areas of life, including increasing criminal and suicidal behaviors, general psychological distress, and decreasing overall well-being (Battersby et al., 2006; Black et al., 2013; Kessler et al., 2008; Laursen et al., 2016). Therefore, treatment tends to focus on the gambler's relationships, mental health, and financial well-being. Unfortunately, the published literature suggests that the domain of religion/spirituality has been largely ignored in the clinical treatment of GD. However, the findings of this study and prior studies (i.e., Gutierrez et al., 2020) suggest that RSS may be salient for clinicians' treatment of problematic gambling. This is especially clinically relevant given that RSS often predict other psychological problems. More broadly, this work supports, as many prior works have also suggested, the need for spiritually integrated care in mental health treatment settings that allows for the assessment, acknowledgment, and exploration of clients' religious/spiritual beliefs (e.g. Pargament, 2007). Furthermore, GA, which already has some ties to addressing religion/spirituality, may be particularly poised to address some of these concerns.

Limitations and Constraints on Generalizability

This study used self-report measures, which have well-known limitations (Chan, 2009). Potential problems with MTurk data, including data quality issues and concerns about representativeness, have been noted in previous work; however, validity checks, which were used in this data collection, may somewhat mitigate these (e.g. Chmielewski & Kucker, 2020). Since this sample was from the U.S., caution should be taken when generalizing these results to other countries.

This study included only two time points, precluding growth curve modeling or causal inferences. Admittedly, the use of hierarchical regressions to predict future RSS through residualized change is only one of many possible approaches to longitudinal data. Latent change scores, difference score models, and simple pre-and-post comparisons are each potential ways to analyze this same data (Castro-Schilo & Grimm, 2018; Gollwitzer et al., 2014). However, given that our aim was to determine whether gambling related problems predicted unique variance in RSS over time, using simple hierarchical regressions was the most parsimonious approach.

Religiousness, including religious attendance and strength of belief, was not included as a control variable in the present study, as it was not included in this dataset. This is a particular concern because prior works have shown that religiousness has a significant effect on an individual's participation in gambling and their experiences of RSS (Exline et al., 2014; Lam, 2006). However, prior work has noted that RSS are not just symptoms of distress in religious populations (Stauner et al., 2016). Rather, RSS are unique phenomena, that occur more often in religious populations, represent distinct distress, and predict salient mental health outcomes, even when controlling for religiousness (Exline et al., 2014). Future studies should be aware that this would be a useful control variable and may have accounted for a significant amount of the unexplained variance in this study.

The mean values of the RSS scale and SOGS were low (below the midpoint of the scale). As such, these results should be viewed with caution as they may not be representative of individuals who score highly on either scale. This may also explain the discrepancy between these results and those of Gutierrez et al. (2020).

The amount of variance in struggles accounted for by problem gambling severity in the regressions was small-to-moderate (i.e., 2.4% to 10.4% at baseline; 0.6% to 2% over time). As such, although gambling behavior is likely related to RSS, further research is necessary to fully

understand the practical effect of this relationship. Even so, the longitudinal regression analyses were conservative tests, as they controlled for baseline levels of RSS, and therefore small effect sizes should be expected.

Conclusion

Both gambling and RSS have been shown to predict significant psychological distress, such as depression and anxiety (e.g. Kessler et al., 2008). Historically, many religious/spiritual groups have viewed gambling in a negative light and shunned those who participated. As such, those who gamble may find themselves at odds with their religion/spirituality, leading to further distress. This study looked at how much problem gambling severity was uniquely associated with RSS using correlational and hierarchical regression analyses. The results showed that gambling problem severity was uniquely associated with RSS cross-sectionally and continued, except for ultimate meaning struggles, after six months. Overall, researchers should continue to investigate how to reduce RSS, particularly in those with GD, and examine how religiousness may affect this relationship. Results from this study suggest that, despite being largely ignored to date, the domain of religion/spirituality, and in particular RSS, should be given attention when considering problematic gambling behaviors.

Declarations

Funding

We thank the International Center for Responsible Gaming (ICRG) for the seed grant awarded to Joshua B. Grubbs that funded the collection of this dataset.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Ethics Approval

Ethical approval was waived by the Institutional Review Board at Bowling Green State University for this work because it solely utilized secondary data and, therefore, did not meet the definition for human subjects' research.

Availability of data and material

Data will be made available upon request to the corresponding author.

Authors Contributions

JTGW: Conceptualization, methodology, formal analysis, data curation, writing, visualization, project administration; **JBG:** Conceptualization, validation, investigation, resources, data acquisition, writing-review and editing, supervision, funding acquisition.

Acknowledgements

We are grateful for Harold Rosenberg's and Dara Musher-Eizenman's helpful comments on an earlier version of this manuscript.

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496 Tables

Table 1.
Demographics of Participants at Baseline and Follow-up Time Points.

	Baseline [a]	Follow-up [b]
Gender		
Female	412 (54%)	185 (54%)
Male	352 (46%)	157 (46%)
Age	36.1 (SD=11.2)	37.4 (SD=11.3)
Race/Ethnicity		
White/Caucasian	584 (76%)	261 (76%)
African-American/Black	89 (12%)	40 (12%)
Asian/Pacific Islander	66 (9%)	34 (10%)
Latino/Hispanic	63 (8%)	29 (9%)
American Indian/Native-American/Alaska Native	12 (2%)	3 (1%)
Middle Eastern	3 (0%)	0 (0%)
Other	10 (2%)	3 (1%)
Sexual Orientation		
Heterosexual	664 (87%)	302 (88%)
Homosexual	33 (4%)	12 (4%)
Bisexual	56 (7%)	25 (7%)
Asexual	3 (0%)	1 (0%)
Pansexual	5 (1%)	1 (0%)
Other	4 (0%)	1 (0%)
Relationship/Marital Status		
Married	271 (36%)	138 (40%)
Single, not in a committed relationship	241 (32%)	103 (30%)
Single and in a committed relationship	122 (16%)	45 (13%)
Living with a partner	115 (15%)	46 (14%)
Divorced	47 (6%)	29 (9%)
Separated	9 (1%)	5 (2%)
Widowed	6 (1%)	2 (1%)
Average Annual Income	$56,175 (SD=$44,039)	$59,145 (SD=$48,935)
Preferred game type		
Chance games	448 (59%)	202 (59%)
Skill-based games	168 (22%)	85 (25%)
Equal preference	148 (19%)	55 (16%)
Online games	59 (8%)	26 (8%)

Note: [a] *N*=764; [b] *N*=342

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Table 2.
Descriptive Statistics for and Correlations Between Neuroticism, SOGS and RSS Subscale Measures.

	Mean (*SD*)	*α*	*Observed Range*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
Baseline [a]											
1. Neuroticism	2.71 (0.85)	.94	1-4.92	-							
2. SOGS	3.50 (4.03)	.90	0-20	.132	-						
RSS											
3. Divine	1.43 (0.84)	.93	1-5	.277	.319	-					
4. Demonic	1.42 (0.85)	.94	1-5	.172	.364	.622	-				
5. Interpersonal	1.69 (0.89)	.87	1-5	.298	.215	.537	.421	-			
6. Moral	1.71 (0.99)	.92	1-5	.278	.337	.611	.661	.476	-		
7. Ultimate Meaning	1.89 (1.06)	.89	1-5	.520	.244	.573	.386	.546	.527	-	
8. Doubt	1.57 (0.91)	.92	1-5	.325	.274	.732	.500	.584	.624	.609	-
Follow-up [b]											
RSS											
9. Divine	1.34 (0.74)	.95	1-5	.261	.369	.644	.463	.381	.365	.355	.427
10. Demonic	1.32 (0.70)	.94	1-5	.168	.394	.414	.604	.344	.386	.224	.308
11. Interpersonal	1.50 (0.74)	.87	1-4.60	.330	.267	.350	.379	.642	.337	.388	.372
12. Moral	1.54 (0.86)	.92	1-4.75	.268	.375	.350	.460	.309	.610	.327	.428
13. Ultimate Meaning	1.76 (0.98)	.90	1-5	.520	.237	.407	.263	.362	.309	.619	.409
14. Doubt	1.43 (0.73)	.90	1-4.25	.338	.365	.562	.405	.421	.446	.433	.655

Note: [a] N=764; [b] N=342; All correlations are statistically significant (p<.01)

Table 3.
Summary of Hierarchical Regression Analysis of Variables Predicting All Six RSS at Baseline.

	STEP 1					
Variable	RSS Divine	RSS Demonic	RSS Interpersonal	RSS Moral	RSS Meaning	RSS Doubt
Neuroticism	.267**	.147**	.298**	.272**	.528**	.313**
Gender	.028	-.027	.062	.045	.096**	.014
Online Gambler	.119**	.121**	.089*	.066	.030	.091**
Chance Games	.010	.046	.019	.020	-.102*	.005
Skill Games	.055	.100*	.002	.076	-.078	.037
Age	.001	-.019	.001	-.032	.005	-.006
Annual Income	-.079*	-.097**	-.044	-.068	-.081**	-.077*
R^2	.101	.060	.103	.096	.297	.122
F for R^2	12.13**	6.83**	12.43**	11.45**	45.54**	14.97**
	STEP 2					
Neuroticism	.232**	.103**	.276**	.233**	.506**	.284**
Gender	.007	-.053	.050	.023	.083*	-.002
Online Gambler	.060	.048	.054	.001	.007	.042
Chance Games	.004	.039	.015	.014	-.105**	.000
Skill Games	.026	.064	-.015	.044	-.096. *	.014
Age	.005	-.015	.004	-.028	.008	-.003
Annual Income	-.075*	-.092**	-.042	-.065	-.078**	-.074*
SOGS	**.270****	**.337****	**.163****	**.297****	**.171****	**.223****
R^2	.168	.163	.128	.176	.323	.167
ΔR^2	.067	.104	.024	.080	.027	.045
F for ΔR^2	60.42**	93.54**	21.13**	73.61**	29.71**	41.04**

Note: ** $p \leq 0.01$; * $p \leq 0.05$; N=764
Problem gambling severity in bold typeface for clarity.

Table 4.
Summary of Hierarchical Regression Analysis of Variables Predicting All Six RSS at Follow-up after Controlling for Baseline Levels of the Same RSS.

			STEP 1			
Variable	RSS Divine	RSS Demonic	RSS Interpersonal	RSS Moral	RSS Meaning	RSS Doubt
Neuroticism	.098*	.049	.184**	.100*	.291**	.146**
Gender	-.025	-.030	-.006	-.037	.062	.012
Online Gambler	.049	.097*	.080	.102*	.118**	.091*
Chance Games	-.123*	.007	-.042	-.071	.044	-.078
Skill Games	-.012	.015	.013	.024	.047	-.033
Age	.048	-.090	-.032	-.030	.034	-.010
Annual Income	-.038	-.032	-.056	-.033	-.096*	-.047
Baseline RSS	.608**	.567**	.590**	.561**	.459**	.588**
R^2	.438	.391	.464	.407	.465	.466
F for R^2	32.47**	26.71**	36.01**	28.57**	36.24**	36.32**
			STEP 2			
Neuroticism	.090*	.037	.176**	.093*	.286**	.137**
Gender	-.025	-.033	-.007	-.037	.062	.011
Online Gambler	.012	.059	.053	.063	.092*	.045
Chance Games	-.129*	-.001	-.047	-.078	.038	-.086
Skill Games	-.039	-.014	-.005	-.002	.030	-.064
Age	.050	-.089	-.031	-.031	.035	-.009
Annual Income	-.028	-.021	-.048	-.023	-.089*	-.036
Baseline RSS	.569**	.517**	.576**	.520**	.450**	.553**
SOGS	**.141****	**.147****	**.087***	**.136****	**.078**	**.157****
R^2	.453	.407	.470	.421	.470	.485
ΔR^2	.015	.016	.006	.014	.005	.020
F for ΔR^2	9.19**	8.85**	3.88*	7.96**	3.14	12.59**

Note: ** $p \leq 0.01$; * $p \leq 0.05$; $N=342$
Problem gambling severity in bold typeface for clarity.