Interactions of Religious Coping and Impulsivity on the Relationships between Trauma, PTSD, and Substance Use among a Community Sample

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Abstract

Previous studies have demonstrated a link between traumatic experiences, posttraumatic stress disorder (PTSD) symptoms, and substance use. Two existing perspectives on this relationship between trauma and substance use include the self-medication hypothesis and the shared vulnerability hypothesis. Few studies have investigated these competing perspectives simultaneously, which makes understanding their unique contribution and interactions difficult. This study addresses that shortcoming by investigating the role of two distinct dimensions, religious coping and impulsivity. Past research has demonstrated that religious coping relates to the emotional sequelae of past traumas (Chen, 2005), PTSD symptoms (Currier, Holland, & Drescher, 2015), and has also been shown to weaken the relationship between stress and alcohol use (Stoltzus & Farkas, 2012). Similarly, impulsivity is relevant to traumatic experiences and PTSD symptoms (Netto et al., 2016) and substance use disorders (Gonzalez, 2005). This cross-sectional, survey research study investigates associations between religious coping, impulsivity traits, traumatic life experiences, posttraumatic stress symptoms, and substance use among a sample of 341 participants recruited from Amazon's Mechanical Turk. The data were analyzed with stepwise regression model fits. Findings partially supported study hypotheses, though positive associations with positive religious coping were surprising. Practical implications are discussed.

Background

- 28.8 percent of adults have been exposed to one or more traumatic experiences, with 8 percent of people experiencing Posttraumatic Stress Disorder (PTSD; Center for Behavioral Health Statistics and Quality, 2015).
- Approximately 21.5 million Americans aged 12 and older were classified with a substance use disorder (SUD) in 2013 (Center for Behavioral Health Statistics and Quality, 2015).
- Of those diagnosed with PTSD, 28% have a co-occurring substance use disorder (White, 2005).
- Theories for the relationship between SUD and PTSD include the self-medication hypothesis and the shared vulnerability hypothesis. Self-medication posits that individuals with PTSD use substances to cope with distressing PTSD symptoms (Khantzian, 1997). Shared vulnerability places impulsive personality traits as a root cause of both trauma and substance use (Netoo et al., 2016). Few studies have investigated these competing perspectives simultaneously, which makes understanding their unique contribution and interactions difficult.
- Religious coping has been found to be a protective factor among college students for excessive substance use (Giordano et al., 2015). Positive and negative religious coping were associated with stress-related growth (Pargament et al., 1998).
- Impulsivity has been found to be associated with traumatic experiences and PTSD symptoms (Netto et al., 2016) as well as substance use problems (Bernstein et al., 2015; Smith & Cyders, 2016), suggesting it may be a shared vulnerability.
- From the self-medication perspective, the hypotheses are that (1) PTS symptoms would mediate the relationship between traumatic experiences and alcohol use, and that (2) positive and negative religious coping would moderate the relationship between traumatic experiences and PTS symptoms, as well as PTSD symptoms and substance use. From the shared vulnerability perspective, (3) impulsivity traits, measured as positive urgency and negative urgency, were expected to be risk factors for traumatic experiences and alcohol use problems and drinking frequency.

Method

Participants

Participants (N = 341) were recruited from Amazon's Mechanical Turk (Mturk). Participants had a mean age of 34.6 (SD = 11.4) and 56.9% were female. The majority of participants were Caucasian (77.1%) but other ethnicities were also represented: African-American (6.5%), Asian-American (6.5%), Latino/Hispanic (5.5%), Biracial (2.6%), Native American (0.9%) and Other (0.9%). The sample had varying household income levels, with the majority being between $20-40k (27.06%). Most participants identified as Protestant Christian (22.8%) and Agnostic (19.06%). Other religions that were also represented included Catholic (18.48%), Atheist (17.0%), and Buddhist (3.8%).

Measures

- The Life Events Checklist (LEC-5) is a self-report questionnaire that assesses traumatic event exposure according to the DSM-5 PTSD diagnostic criteria. These includes exposure to events such as physical assault, sexual assault, loss of a family member, and a life-threatening accident (Weathers et al., 2013)
- The PTSD Checklist (PCL-5) is a measure that assesses the four symptom clusters of intrusions, avoidance, Negative Alteration in Mood and Cognition (NAMC), and Alterations in Arousal and Reactivity (Blevins, Weathers, Davis, Witte, & Domino, 2015).
- Two sub-scales of the UPPS , Positive and Negative Urgency, were assessed. Positive and negative urgency indicates impulsive behaviors during periods of positive and negative affect, respectively (Contractor, Armour, Forbes, & Elhai, 2016).
- The Michigan Alcoholism Screening Test (MAST) is a 24 item scale checklist that examines problematic drinking and negative consequences associated with consuming alcohol (Shields, Howell, Potter, & Weiss, 2007).
- Drug Abuse Screening Test (DAST) is a 28 item, scored survey that evaluates problematic substance use, utilized for clinical screening and treatment and evaluation research.
- The Brief RCOPE is a measure of religious coping that indicates what individuals psychological and behaviorally turned to when faced with major life stressors. The Brief RCOPE is a measure that has two subscales within it: positive and negative religious coping, two different methods that are practiced psychologically and behaviorally (Pargament et al., 1999).

Procedure

The study data were collected through an online survey platform at one time point (i.e., cross-sectional design). The first page of the survey presented the Informed Consent. Participants were not able to proceed without indicating their consent. The survey included the following sections: demographics, Life Events Checklist for DSM-5 (LEC-5), PTSD Checklist for DSM-5 (PCL-5), Brief Religious Coping Questionnaire (Brief RCOPE), Drug Abuse Screening Test (DAST), and Michigan Alcoholism Screening Test (MAST). The survey included the demographic questions, followed by the LEC-5 and PCL-5, but all other scales were randomly administered to study participants to control for order effects. The study took approximately 10-20 minutes to complete.

Results

Table 1.

Descriptive Statistics and Alpha Reliabilities for Study Variables

Variable	Mean	SD	Alpha
LEC-5	2.94	2.67	.74
PCL-5	1.29	0.98	.96
Positive Urgency	1.75	0.73	.96
Negative Urgency	2.23	0.70	.91
MAST	6.10	4.82	.90
DAST	4.86	5.51	.92
Pos RCOPE	0.91	0.92	.95
Neg RCOPE	2.23	0.70	.89

Figure 1 and 2.

Histograms of Traumatic Experiences and PTSD Symptoms

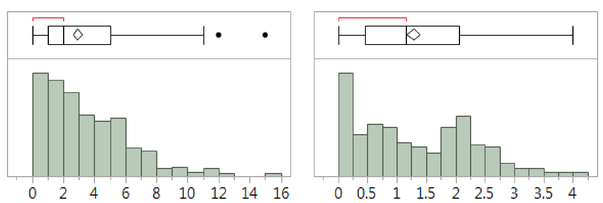

Table 2.

Correlation Matrix for Study Variables

	LEC-5	PCL-5	Pos Urgency	Neg Urgency	MAST	DAST	Pos RC	Neg RC
LEC-5	-	0.189	-0.079	0.114	0.026	0.160	-0.092	-0.168
PCL-5	0.189	-	0.250	0.420	0.331	0.280	0.104	0.417
Pos Urgency	-0.079	0.250	-	0.624	0.457	0.306	-0.041	0.299
Neg Urgency	0.114	0.420	0.624	-	0.396	0.329	-0.032	0.281
MAST	0.026	0.331	0.457	0.396	-	0.620	0.185	0.414
DAST	0.160	0.280	0.306	0.329	0.620	-	0.084	0.284
Pos RC	-0.092	0.104	-0.041	-0.032	0.185	0.084	-	0.432
Neg RC	-0.168	0.417	0.299	0.281	0.414	0.284	0.432	-

Table 3: *Standardized Betas of Stepwise Regression by AICc Model Fit for Alcohol Problems, Substance Use Problems, and PTSD Symptoms*

Variable	Alcohol Problems (B)	Substance Use Problems (B)	PTSD Symptoms (B)
LEC-5	-	0.18^	0.27^
PTSD Checklist-5	0.22^	0.14	~
Positive Urgency	0.38^	0.22^	~
Negative Urgency	-	-	~
Positive RC	0.17^	-	-0.09
Negative RC	-	0.03	0.50^
PCL-5*Positive RC	0.11	-	-
PCL-5*Negative RC	-	0.23^	-
Overall, Adjusted R^2	0.28	0.17	0.24^

Note: Dash line indicates factor was not included in model, curved line indicates an untested factor. * $p < .05$, ^ $p < .01$.

Discussion

Findings on the role of religious coping and impulsivity are generally consistent with both the self-medication hypothesis and shared vulnerability hypothesis.

Alcohol Problems

- Positive religious coping had a direct and positive association with alcohol problems, as well as an interaction with PTSD symptoms, that increased risk for alcohol problems. These relationships are surprising considering that positive religious coping has generally been associated with better health outcomes. One potential explanation is that positive religious coping may be an important, albeit ineffective, strategy that some may use to cope with alcohol problems, though this is speculative with cross-sectional research.
- Positive urgency was a strong predictor of alcohol problems, while negative urgency did not add unique predictive variance.

Substance Use Problems

- Negative religious coping moderated the effect of PTSD symptoms on substance use problems, such that those with increased PTSD symptoms who utilized negative religious coping were particularly at risk of substance use problems. This indicates that negative religious coping may be important to assess among those dually diagnosed with PTSD and SUD.
- Positive urgency, but not negative urgency, was a predictor of substance use problems. The role of negative urgency was diminished by accounting for the number of traumatic personal experiences.

PTSD Symptoms

- Negative religious coping was strongly associated with PTSD symptoms. This relationship might indicate that negative religious coping may either promote PTSD reactions, or that PTSD symptoms may engender negative religious coping, although other factors may explain this association.

Limitations

- The study was designed to explore religious coping while controlling for facets of impulsivity, and vice versa, but did not address other potential covariates.

Future Directions

- Future studies could investigate the role of religious coping and impulsivity using longitudinal methods to better understand the role of these variables in PTSD and SUD.
- Studies could also investigate the role of religious coping in the prevention and resolution of PTSD and SUD.