

Article

Spiritual Decline as a Predictor of Posttraumatic Stress

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Abstract: Many college students in the United States arrive on campus with exposure to both traumatic events and typical negative life events, as well as varying levels of emotional wellness. One way that students may seek out help is through spiritually supportive wellness programming. The current study examines the prevalence of and relationship between traumatic life events, typical negative life events, and spiritual growth and decline as predictors of posttraumatic stress in a sample of undergraduates ($N = 88$) seeking spiritually supportive wellness. Traumatic and typical negative life events and spiritual decline were predictive of posttraumatic stress. Furthermore, a moderation effect was found such that while participants with high trauma exposure and high spiritual decline reported the highest posttraumatic stress, those with high trauma exposure and low spiritual decline reported lower posttraumatic stress, similar to those with low trauma exposure. These results have implications for the role of spiritual decline in the etiology of PTSD (Posttraumatic Stress Disorder) within emerging adult populations who identify as spiritual that warrant further study.

Keywords: trauma; spirituality; religiosity; spiritual decline; emerging adulthood; student wellness; college students

1. Introduction

The majority of current college students in the United States belong to Generation Z, a group defined as those born between 1997 and 2012 ([American Psychological Association 2018](#); [Astor 2020](#)). As members of a generational group, these college students are characterized in the research literature and popular media as having specific traits and behavioral tendencies that distinguish them from prior generations, and thus from prior cohorts of college-aged students. Empirical studies have described the current cohort of students as belonging to a social context with greater racial, ethnic, and gender diversity, a lower likelihood of religious affiliation, and a greater likelihood of political progressivism and activism than previous cohorts ([Eagan et al. 2017](#)).

Popular media portrays Gen Z as emotionally fragile, overprotected, narcissistic, demanding, and hypersensitive ([Chopik and Grimm 2019](#); [Moss et al. 2019](#)). Longitudinal population data indicates self-rated emotional health has, in fact, declined in recent decades despite stable health-seeking behaviors such as physical exercise ([Eagan et al. 2014](#); [Reetz et al. 2014](#), [Haeberlein et al. 2020](#)). The number of freshmen entering universities who believe they have a “very good chance” of utilizing counseling services while in college has nearly tripled over the past thirty years. Today, over a third (34%) of college freshmen report feeling anxious frequently, and nearly 14% report feeling depressed frequently ([Stolzenberg et al. 2019](#)). Stereotypes of Generation Z may actually reflect popular media interpretation of a true generational disparity in emotional wellness.

One possible explanation for generational disparities in emotional wellness is the current high prevalence of reported stress and trauma. Data collected on undergraduate students attending college in the United States indicate that freshmen students matriculate with significant rates of trauma exposure and posttraumatic stress (PTS). Prevalence estimates of exposure to potentially traumatic events (PTE) in college students upon admission range from 56% to 86%, with a quarter of students reporting three or more PTEs occurring prior to matriculation (Read et al. 2011; Smyth et al. 2008). High rates of reported PTEs and related PTS in Gen Z have been interpreted as effects of a changing cultural, familial, and social context, including changes in parenting strategies and social norms about stress management that contribute to overprotected and less resilient college students (Wieland and Kucirka 2020). However, these proposed factors may not fully account for the high incidences of PTS in Gen Z.

It is well understood that the majority of individuals who experience a PTE do not develop PTSD (Posttraumatic Stress Disorder; deRoos-Cassini et al. 2010; Kessler et al. 1995). The literature has identified a number of risk and resilience factors for both trauma exposure and the development of PTSD, including cognitive ability, coping and stress response styles, personality factors, comorbidity, and psychophysiological and social-ecological factors (DiGangi et al. 2013). Outside of these commonly cited protective factors, spiritual growth has been identified in the literature as protective against PTS and as a domain of posttraumatic growth that has been identified as a predictor of health and wellbeing following trauma exposure (Ulloa et al. 2016; Kennedy et al. 1998; De Castella and Simmonds 2013; Danhauer et al. 2013).

While spiritual growth has been identified as promoting recovery from trauma, it is also more generally a well-documented developmental task during late adolescence (Good and Willoughby 2008; King et al. 2006; Hardy et al. 2019). Spirituality has been defined variably by researchers, with most definitions citing a search for or personal relationship with the sacred (Cohen and Koenig 2003; Harris et al. 2018) or transcendent (Hufford 2005), which may or may not exist within organized religion. With increasing rates of potentially traumatic events coinciding with a critical developmental period for spiritual individuation, questions of how trauma may impact spiritual individuation in late adolescence naturally emerge. Specifically, it is unclear whether trauma exposure leads to questioning of fundamental beliefs about a higher power or leads to moral injury or spiritual decline, an observed phenomenon among combat veteran populations (Smith-MacDonald et al. 2018; Litz et al. 2009; Kopacz et al. 2016).

Within veteran populations, spiritual concerns related to trauma symptoms have most notably been identified in research concerning moral injury, defined as “the perpetration of, failure to prevent, or bearing witness to acts that transgress deeply held moral beliefs and expectations that are deleterious in the long-term, emotionally, psychologically, behaviorally, spiritually, and socially” (Litz et al. 2009, p. 695). Currently, trauma researchers disagree as to whether moral injury is a moderator or etiological factor of PTSD or rather reflects a separate posttraumatic syndrome altogether (Jinkerson 2016; Buechner and Jinkerson 2016; Battles et al. 2018). The vast majority of moral injury literature has focused on military service members or veterans. To our knowledge, no study to date has evaluated moral injury among college students or adolescent populations. Within the literature on civilian trauma, spiritual decline—the depreciation or degradation of pre-existing spiritual beliefs—has been examined in the context of PTEs such as a cancer diagnosis and near-death experiences (Cole et al. 2008; Greyson and Khanna 2014). Spiritual decline in these studies has been defined as the loss or weakening of spiritual associations with worldview, goals, sense of self, and relationships. However, spiritual decline has not yet been identified as a risk or etiological factor for PTS among emerging adult populations. PTEs may precipitate a spiritual crisis with responses ranging widely from posttraumatic spiritual growth and connection with a higher power to experiences of moral injury or spiritual decline.

The primary aim of this study is to further the inquiry around spiritual development, moral injury, and PTS by examining the extent to which spiritual growth and spiritual decline predict PTS in emerging adult undergraduates (ages 18–25) seeking spiritually supportive wellness services.

Further, while trauma exposure is a prerequisite to the development of PTSD, stressors common among adolescents have not been studied in relation to PTS. Typical adolescent negative life events have been found to be related to depression and perceived wellbeing (Bijttebier et al. 2018). To the authors' knowledge, the unique contribution of PTEs above and beyond typical adolescent negative life events on PTS symptoms has not yet been examined.

In a sample of undergraduates seeking spiritually supportive wellness programming, this study examines (1) the rates of PTEs and negative life events; (2) the association between negative life events, PTEs, and PTS; (3) the associations between spiritual growth and spiritual decline with PTS.

2. Materials and Methods

2.1. Ethics Approval

This research was approved by the Institutional Review Board (IRB) of Teachers College, Columbia University.

2.2. Participants

Participants consisted of 88 undergraduate students in late adolescence ($M = 20.48$ years, $SD = 1.44$) who voluntarily registered for an eight-week 90-min spirituality mind-body (SMB) wellness intervention, Awakened Awareness for Adolescents (AA-A) and completed baseline (T1) measures related to the primary outcomes of this study.

2.3. Data Collection

The open trial was conducted in residential hall lounges at two sister university campuses located in the urban northeast of the United States. Students were recruited through email, tabling at residence lounges, social media, and flyer advertisements posted in residential halls, cafeterias, and other common areas on campus. Participants were required to attend an orientation session which provided an overview of the structure and content of the intervention and study. Trained research assistants administered informed consent and pretest data was collected.

2.4. Assessment of Demographic Information

The following demographic variables were collected from participants: gender, age, race/ethnicity, sexual orientation, personal and household income, employment status, and domestic or international student status. Information was also collected on participants' religion, religious attendance, and the personal importance of religion/spirituality.

2.5. Assessment of the PTSD Checklist (PCL-C)

Posttraumatic stress symptoms (PTS) were measured using the Posttraumatic Checklist–Civilian version (PCL-C; Weathers et al. 1994). The PCL-C was designed to assess symptoms of posttraumatic stress disorder in civilian populations, including emotional numbing, hypervigilance, and intrusive thoughts related to stressful events. Participants are asked about these symptoms in relation to “stressful experiences.” The PCL-C consists of 17 items on a 5-point Likert scale and has been shown to have strong internal consistency (Cronbach's $\alpha = 0.94$) and test-retest reliability ($r = 0.88$ – 0.92) (Ruggiero et al. 2003). A wide range of cutoff scores have been proposed on this scale for detecting probable PTSD, ranging from 30 (Walker et al. 2002; Lang et al. 2003) to the high 50s (Bollinger et al. 2008; Hudson et al. 2008; Grubaugh et al. 2007). This study used a cutoff score of 30 to identify students with clinical symptoms of PTS, as it has been shown to be predictive of PTSD diagnosis in civilians (Walker et al. 2002).

2.6. Assessment of the Life Events Checklist for DSM-5 (LEC-5)

Exposure to potentially traumatic life events (PTEs) was measured using the Life Events Checklist (LEC-5) for DSM-5 (Diagnostic and Statistical Manual of Mental Disorders, 5th Edition; Weathers et al. 2013), a self-report measure with 17 items. Sixteen of the items are events associated with the emergence of symptoms of PTSD or psychological distress, and one item addresses “any other very stressful event or experience.” For each item, respondents select one of the following: “Happened to me,” “Witnessed it,” “Learned about it,” “Part of my job,” “Not Sure,” or “Doesn’t Apply”. As the LEC-5 is intended to identify PTEs, there is no formal scoring protocol (Gray et al. 2004). For the purpose of this article, we identified the number of PTEs that each participant reported as having “Happened to me” in his/her/their lifetime.

2.7. Assessment of the Adolescent Life Events Questionnaire—Revised (ALEQ-R)

A broad range of stressors that typically occur among adolescents were measured using the Adolescent Life Events Questionnaire—Revised (ALEQ-R; Hankin and Abramson 2002). Participants were asked to indicate how often each item happened to them over the past three months, on a Likert scale from 0 (never) to 4 (always). Areas of stressors include school problems, friendship difficulties, romantic difficulties, and family problems. The ALEQ has demonstrated good reliability and validity (Hankin 2008). Past research reported alphas ranging from 0.93 to 0.96, indicating strong internal consistency (Xiao et al. 2016; Wang et al. 2017). For the purposes of this article, the number of stressors that each participant reported as having experienced in the last three months were identified (Hamlat et al. 2014).

2.8. Assessment of the Spiritual Transformation Scale (STS)

The Spiritual Transformation Scale (STS; Cole et al. 2008) was developed to assess changes in spirituality as a response to negative life events. The scale has been reported with strong internal reliability (Cronbach’s $\alpha = 0.98$) and test-retest reliability ($r = 0.85$). The scale includes two subscales: spiritual growth (29 items) and spiritual decline (11 items). The STS measures perceived sense of personal spiritual growth (e.g., “My way of looking at life has changed to be more spiritual”) and decline (e.g., “My faith has been shaken and I am not sure what I believe”) across four domains: world view (e.g., “My way of looking at life has changed to be more spiritual”) goals/priorities (e.g., “I spend more time taking care of my spiritual needs”, “Spirituality seems less important to me now”), sense of self (e.g., “I have grown spiritually”, “In some ways, I am off my spiritual path”), and relationships (e.g., “My relationships with other people have taken on more spiritual meaning”, “In some ways, I am spiritually withdrawn from other people”).

2.9. Statistical Analyses

All data analyses were carried out using SPSS statistical software (version 26, IBM, Armonk, NY, USA).

Initial examination of demographics and PTEs were completed using frequency counts. The sample was split into two groups, referred to as high and low PTS, based on the clinical cut-off of 30 on the PCL-C. Frequencies were compared between high and low groups using chi-square analysis.

Preliminary analyses examined assumptions of normality, linearity, multicollinearity, and homoscedasticity. A linear regression, using age and gender as predictors and PTS as an outcome variable, was employed to account for the shared variance of demographics in PTS. Adolescent life events, PTEs, spiritual decline, the interaction of spiritual decline and PTEs, spiritual growth, and the interaction of spiritual growth and PTEs on PTS were added to a second regression model to examine their association with PTS.

3. Results

3.1. Description of Participants

Detailed descriptions of the demographics of the participants are included (see Table 1), as they have implications for the main analyses. The sample was almost entirely (97.7%) composed of those who fell within Generation Z (born in or after 1997). Overall the sample was highly diverse. Gender and sexual minority statuses included non-binary identification (4.5%), bisexual (15.9%), gay/lesbian (12.5%), pansexual (2.3%), queer (2.3%), and questioning (4.5%). Rates of race/ethnicity were as follows: Afro-Latinx (1.1%), Asian (19.3%), Black/African American (12.5%), Jewish (1.1%), Latinx (14.8%), and Other/Multiracial (13.6%). Thirty-four percent of participants were international students (born and raised outside of the United States).

Approximately half (50.9%) of participants reported that religion or spirituality (R/S) was of moderate or high personal importance, while the other half (48.9%) of participants reported that R/S was of slight or no importance. A host of religions were reported by participants in this sample, including Protestant (13.6%), Catholic (14.8%), Jewish (9.1%), Hindu (1.1%), and Muslim (3.4%). Overall, participants reported attending religious services less frequently now than they did growing up.

Table 1. Demographic Characteristics of Participants.

Characteristic	<i>n</i>	%
Gender		
Female	64	72.7
Male	20	22.7
Non-Binary	4	4.5
Sexual Orientation		
Bisexual	14	15.9
Gay/Lesbian	11	12.5
Pansexual	2	2.3
Queer	2	2.2
Questioning	4	4.5
Straight	51	58
Prefer not to Specify	4	4.5
Race/Ethnicity		
Afro-Latinx	1	1.1
Asian	17	19.3
Black/African American	11	12.5
Jewish	1	1.1
Latinx	13	14.8
White	33	37.5
Other/Multiracial	12	13.6
International Student Status		
International Student	30	34.1
Domestic Student	58	65.9
Annual Personal Income (\$)		
<15 K	83	94.3
>15 K	3	3.4
Household Personal Income (\$)		
<15 K	4	4.5
15–100 K	39	44.3
>100 K	39	44.3
Other/NA	6	6.8
Religiosity or Spirituality		
No Importance	13	24.5
Slight Importance	13	24.5
Moderate	19	35.8
High Importance	8	15.1

Table 1. Cont.

Characteristic	<i>n</i>	%
Religious Denomination		
Protestant	12	13.6
Catholic	13	14.8
Jewish	8	9.1
Hindu	1	1.1
Muslim	3	3.4
Other	8	9.1
None	43	48.9
Religious Attendance Growing Up		
Never	12	13.6
Less than once a year	9	10.2
About once or twice a year	23	26.1
About once a month	13	14.8
Once a week or more	31	35.2
Religious Attendance Now		
Never	29	33
Less than once a year	10	11.4
About once or twice a year	30	34.1
About once a month	8	9.1
Once a week or more	11	12.5
Posttraumatic Stress ^c	63	71.6

Note. *N* = 88. ^c Scored 30 or higher on the Posttraumatic Checklist–Civilian version (PCL-C).

3.2. Rates of Posttraumatic Stress Symptoms

A clinically elevated level of posttraumatic stress symptoms (high PTS) was defined by the cut-off score of 30 on the PCL-C, as this level has been associated with a formal diagnosis of PTSD in civilians (Walker et al. 2002). More than two-thirds (71.6%) of participants in this study endorsed high PTS scores (Table 1). Chi-square analyses did not reveal any differences in rates of high PTS across gender, age, sexual orientation, race/ethnicity, or international status groups ($p > 0.05$).

3.3. Rates of Potentially Traumatic Events

PTE total frequency was calculated in order to examine the rates of PTEs among this sample. Eighty-six percent of participants overall reported experiencing at least one PTE. Of those with high PTS, 92% experienced at least one PTE, versus 72% of those with low PTS (Table 2). A chi-square analysis revealed a significant difference in PTE exposure across participants with high and low PTS ($\chi^2(1, N = 88) = 6.12, p = 0.013$), such that those with elevated PTS were more likely to experience a PTE. Chi-square analyses did not reveal any differences in PTE exposure across gender, age, sexual orientation, race/ethnicity, or international status groups ($p > 0.05$).

Frequencies for each PTE were calculated in order to identify the most common PTEs for this population (Table 3). These frequencies were also reported in reference to high and low PTS scores in Table 3. Apart from the report of “any other stressful event or experience” (43%), the most common PTE was “other unwanted or uncomfortable sexual experience” (45.5%), followed by natural disaster (32.3%), transportation accident (23.9%), physical assault (18.2%), and sexual assault (18.2%). A chi-square was conducted on each PTE to examine if the rate of exposure to any one event differed across levels of PTS. Only one PTE, “other unwanted or uncomfortable sexual experience”, emerged as significant ($\chi^2(1, N = 88) = 4.29, p = 0.038$). Participants who reported this event were more likely to have high PTS.

Table 2. Frequency of total number of PTEs for all participants, participants above the PCL cutoff of 30 (High PTS), and participants below the PCL cutoff of 30 (Low PTS).

PTE Frequency	Overall		High PTS		Low PTS	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
0	12	13.7	5	7.9	7	28
1	26	29.5	15	23.8	11	4
2	19	21.6	16	25.4	3	12
3	12	13.7	10	15.9	2	8
4	10	11.4	9	14.3	1	4
5	5	5.7	5	7.9	0	0
7	2	2.3	2	3.2	0	0
8	1	1.1	1	1.6	0	0
13	1	1.1	0	0	1	4
Total	88	100	63	100	25	100

3.4. Rates of Adolescent Negative Life Events

Reports of typical adolescent negative life events were far more frequent compared with PTEs; all participants experienced at least six adolescent negative life events within the three months prior to data collection (Table 3). On average, participants experienced 19.2 (SD = 6.57) adolescent negative life events. An independent samples t-test was conducted to examine adolescent life events across levels of PTS. The mean number of typical adolescent negative life events were significantly higher for those with high PTS ($M = 21.1$, $SD = 6.1$) than those with low PTS ($M = 14.4$, $SD = 5.4$; $t(86) = -4.75$, $p < 0.001$).

Table 3. Frequencies of potentially traumatic events for all participants, participants with high PTS, and participants with low PTS.

Event	Overall		High PTS		Low PTS	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Natural Disaster	29	32.3	22	34.9	7	28
Fire or Explosion	5	5.7	4	6.4	1	4
Transportation Accident	21	23.9	16	25.4	5	20
Serious Accident	9	10.2	7	11.1	2	8
Exposure to Toxic Substance	3	3.4	1	1.6	2	8
Physical Assault	16	18.2	14	22.2	2	8
Assault with a weapon	1	1.1	0	0	1	4
Sexual Assault	16	18.2	14	33.2	2	8
Other unwanted or uncomfortable sexual experience *	40	45.5	33	52.4	7	28
Combat or exposure to war zone	1	1.1	0	0	1	4
Captivity	2	2.3	1	1.6	1	4
Life-threatening illness or injury	3	3.4	3	4.8	0	0
Severe human suffering	7	8	6	9.5	1	4
Sudden violent death (Witnessed)	6	6.8	6	9.5	0	0
Sudden accidental death (Witnessed)	6	6.8	6	9.5	0	0
Serious injury, harm, or death you caused someone else	1	1.1	0	0	1	4
Any other stressful event or experience	43	48.9	37	58.7	6	24

Note. Percentages in the "Overall" column were calculated by the number of participants having reported experiencing events out of the total number of participants, $N = 88$. Percentages in the "Above PCL 30 cutoff" column were calculated out of those participants, $N = 63$. Percentages in the "Below PCL 30 cutoff" column were calculated out of those participants, $N = 25$. * Significantly different rates of occurrence ($p < 0.05$) across groups

3.5. Spiritual Decline

ANOVAs were conducted to examine whether spiritual decline (SD) differed among particular demographic groups within the sample. Spiritual decline did not statistically differ across demographic variables of gender ($p = 0.190$), household income ($p = 0.568$), race/ethnicity ($p = 0.061$), international

status ($p = 0.851$), religion ($p = 0.122$), or sexual orientation ($p = 0.813$). There were significant differences in the report of spiritual decline across levels of personal importance of religion or spirituality ($F(1, 87) = 3.01, p = 0.035$), such that for those whom religion/spirituality was “slightly important”, SD was the highest ($M = 38.9$), followed by those for whom religion/spirituality was “moderately important” ($M = 37.4$), with the second-lowest scores being for those whom religion/spirituality was “highly important” ($M = 34.2$). The lowest scores of SD were in those for whom religion/spirituality was “not important at all” ($M = 26.9$).

Bivariate correlations were run between SD and other core measures in this study. Levels of SD were not significantly associated with the frequency of PTEs, negative life events, or spiritual growth. SD was positively associated with PTS ($r(88) = 0.318, p = 0.003$), suggesting that those with the greatest level of spiritual decline had the highest level of posttraumatic stress symptoms.

3.6. Prediction of Posttraumatic Stress

There were no main effects of age and gender on PTS (Model 1, Table 4), which accounted for 5% of the variance of PTS ($R^2 = 0.048$): age ($\beta = 0.11, t = 1.04, p = 0.301$) and gender ($\beta = 0.19, t = 1.81, p = 0.074$). There were significant main effects on Model 2 ($R^2 = 0.454$) of adolescent negative life events ($\beta = 0.36, t = 4.04, p < 0.001$), frequency of PTEs ($\beta = 0.32, t = 3.46, p = 0.001$), and spiritual decline ($\beta = 0.25, t = 2.81, p = 0.006$) on PTS. There was not a significant main effect of spiritual growth ($\beta = -0.013, t = -0.149, p = 0.882$) on PTS. There was a significant interaction ($\beta = 0.207, t = 2.26, p = 0.027$) on PTS, such that among individuals who experienced more PTEs, those who reported greater spiritual decline had higher PTS than those who reported less spiritual decline (Figure 1). Those with more PTEs but who were lower in spiritual decline were similar in PTS than those with fewer PTEs. There was not a significant interaction of spiritual growth and PTE frequency on PTS ($\beta = 0.01, t = 0.05, p = 0.959$).

Table 4. Hierarchical Regression Predicting PTS from PTEs and Adolescent Negative Life Events.

Variable	Model 1		Model 2	
	B	β	B	β
Constant	7.15		22.10	
Age	1.09	0.11	0.415	0.042
Gender	5.5	0.19	3.818	0.133
ALEQ-R			5.680 **	0.362 **
LEC-5			4.529 **	0.320 **
Spiritual Decline			3.665 **	0.245 **
Spiritual Growth			-0.192	-0.013
LEC-5 \times Spiritual Decline			2.624 *	0.204 *
LEC-5 \times Spiritual Growth			0.069	0.005
R^2		0.048		0.454 **
F		2.12		8.196
ΔR^2				0.406
ΔF				9.782

Note. $N = 88$. * $p < 0.05$. ** $p < 0.01$; ALEQ-R = Adolescent Life Events Questionnaire—Revised; LEC-5 = Life Events Checklist for DSM-5.

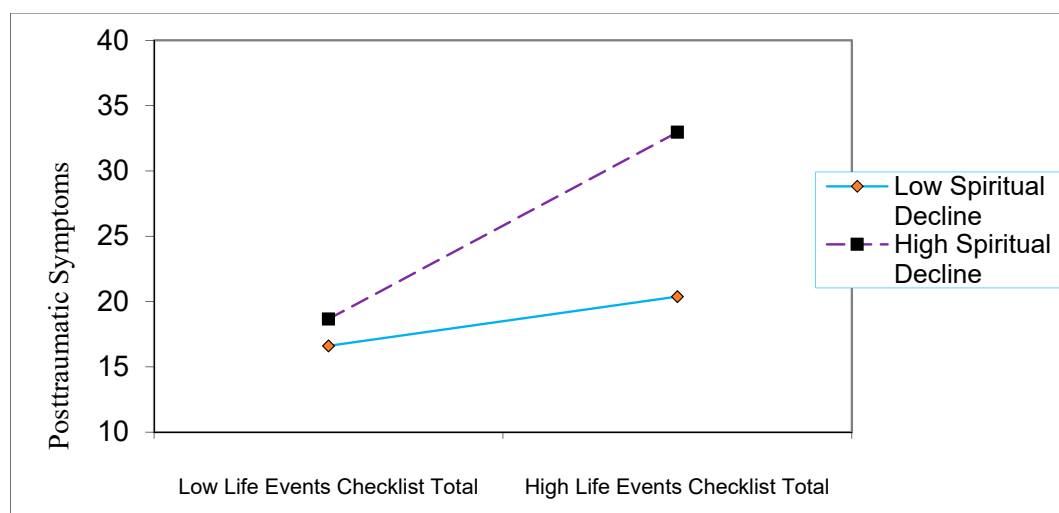


Figure 1. Interaction of Life Events and Spiritual Decline on Posttraumatic Stress Symptoms.

4. Discussion

There are multiple factors that may lead undergraduates to seek a spiritually supportive wellness program, including an awareness of their current mental health needs. Consistent with the broader literature on traumatic experiences in college students, the current study suggests that students in our sample experience high rates of exposure to potentially traumatic events. Specifically, experiences of sexual assault and unwanted sexual contact were the most prevalent in our sample. Students with such experiences seeking a spiritually supportive wellness program may further suggest an awareness of or need for spiritual renewal as an essential part of their recovery from potentially traumatic events.

This sample included a higher proportion of gender sexual minority statuses than is typical of American undergraduates (Stolzenberg et al. 2020). As participants self-selected into the program, overrepresentation of female and gender and sexual minority students may be a result of spiritual programming being particularly suited to address the unmet needs of these students. Being that these groups are also typically more likely to experience trauma and posttraumatic stress (Paquette et al. 2019; Lehavot and Simpson 2014; Martin-Storey et al. 2018), this overrepresentation may imply limitations to the generalizability of this sample. Notably, significant differences were not found across gender and sexual orientation for trauma exposure or posttraumatic stress (see Sections 3.2 and 3.3 above).

Smith-MacDonald et al. (2018), Koenig et al. (2017), and Kopacz et al. (2016) highlight the need for interventions adjunctive to clinical therapy, such as pastoral counseling and mindfulness specifically aimed at healing the moral injury often associated with combat or military service-related trauma. By providing a spiritual/wellness space that integrates spirituality, mindfulness, and meditation on a college campus, we attracted a diverse sample of undergraduates with a range of trauma histories and elevated posttraumatic stress symptoms. These participants revealed a portion of students whose symptoms were high but whose life experiences reflected that of the greater university population. The event most associated with elevated symptom scores was unwanted sexual encounters. Rates of sexual assault vary across studies, largely due to unclear definitions of sexual assault. Among our participants, 18.2% experienced sexual assault and 45% endorsed “other unwanted or uncomfortable sexual experience.” These numbers, particularly in regard to more ambiguous unwanted experiences, are higher than the prevalence rates reported by a representative sample from this same university (13% and 28%, respectively; Mellins et al. 2017). Within the greater university sample, rates of sexual assault increase from 21% among freshmen to 36.4% by senior year (Mellins et al. 2017). This data suggests that not only are students coming into universities with a history of traumatic experiences, including sexual assault, but are experiencing sexual assault while on campus, highlighting the need

not only for sexual assault prevention but also for targeted interventions for both trauma exposure and spiritual decline on college campuses among spiritually seeking students.

It is notable that both typical adolescent negative life events and potentially traumatic events contribute similarly to the model predicting posttraumatic stress and that posttraumatic stress did not vary significantly by demographic characteristics. These findings may generalize to the broader population of emerging adults and suggest that typical adolescent negative life events may not only maintain but increase PTS, leading to a greater likelihood of developing PTSD. These findings may also help to further understand stereotypes around today's adolescents being hypersensitive by highlighting that typical negative events may contribute to and trigger clinical symptoms for those who have experienced trauma.

Spiritual growth has been identified as a central factor in the resilience of individuals who have experienced a traumatic event but have not developed PTSD (Ulloa et al. 2016; Kennedy et al. 1998; De Castella and Simmonds 2013; Danhauer et al. 2013). However, prior to this study, spiritual decline has not been studied as a risk factor or moderator linking trauma exposure to the development of PTSD. This study's findings of an interaction of spiritual decline and potentially traumatic events on posttraumatic stress have important implications for the development of PTSD within the emerging adult population. Those with high levels of spiritual decline and a greater number of potentially traumatic events had the highest posttraumatic stress. Furthermore, those with low spiritual decline had lower posttraumatic stress even when they experienced a greater number of potentially traumatic events. This finding may point to an important risk factor in the etiology of PTSD among spiritually seeking emerging adults; specifically, that subsequent to a lifetime history of potentially traumatic events, those who experience spiritual decline without support are more likely to develop posttraumatic stress, and by extension, PTSD. Moreover, this identifies a focal point for intervention with individuals who identify as spiritual and have experienced trauma leading to existential concerns and doubts about their previously held beliefs. By identifying individuals at risk for spiritual decline, interventions focused on correcting moral injury or negative spiritual coping and fostering posttraumatic spiritual growth may alter a clinical trajectory of development of PTSD. Finally, it suggests that, for students who identify as spiritual and experience unwanted sexual contact or assault, the subsequent questioning and degradation of spiritual belief may drive their seeking alternative or adjunctive approaches to recovery. This may point to a gap in traditional approaches to treatment of psychopathology, as counseling and psychotherapy often do not attend to issues of spirituality (Richards and Bergin 1997; Gallagher 1993; Rose et al. 2001).

It is notable that spiritual growth was not a significant predictor of posttraumatic stress, despite previous literature citing spiritual growth as a resilience factor for PTSD. One possible explanation is that this may be an artifact of the fact that this group was characterized by spiritual wellness-seeking behaviors. Emerging adulthood is defined as a time of identity formation, with spiritual and religious beliefs a central component of individuation (Arnett 2000). This data may have captured students during a period of spiritual decline rather than growth, as spiritually related practices from childhood (e.g., attending religious services with family) may have been replaced by seeking a spiritual wellness program in the face of independent meaning making following PTEs.

University campuses might benefit from integrating spiritual support into wellness programs as adjuncts to services-as-usual as a means to support undergraduates struggling with spiritual decline around traumatic life events. A substantial percentage of undergraduates seeking spiritually supportive wellness on our highly diverse urban campus reported trauma histories of sexual assault and unwanted sexual contact, as well as the witnessing of violence, death, suffering, and natural disasters. These students seemed to have intimated that spiritual support would address their unmet needs, as they self-selected this spiritually supportive wellness program despite a multitude of other available options. Indeed, our findings showed that those students with more trauma exposure and higher spiritual decline showed greater symptoms of trauma, compared with those with trauma exposure and low spiritual decline who were protected from posttraumatic stress. To stave off unnecessary

posttraumatic stress or augment existing services, spiritual mind-body wellness interventions or mindfulness-centered approaches may be advisable.

5. Conclusions

Undergraduates arrive at campus already having experienced potentially traumatic events and experience additional traumas during their college years. Our spiritually supportive wellness intervention attracted undergraduates with high levels of posttraumatic stress. Both potentially traumatic events and typical negative life events predict these high levels of posttraumatic stress. However, the relationship between traumatic events and posttraumatic stress is moderated by spiritual decline, such that those with more potentially traumatic events and higher spiritual decline had higher posttraumatic stress than any other group.

Within popular culture, young people have been stereotyped as being hypersensitive and emotionally fragile (Chopik and Grimm 2019; Moss et al. 2019). This study may offer an alternative explanation to this perception by highlighting previous trauma exposure and current clinical symptoms within the context of spiritual decline among emerging adults pursuing spiritual wellness. Students within this sample report symptoms of trauma that are associated with their posttraumatic symptoms above and beyond typical negative life events. These students continue to function at high levels demanded by their academic environment despite experiencing elevated levels of posttraumatic stress, which runs contrary to the depiction of Gen Z students as emotionally fragile. The latter picture instead suggests that Gen Z students are resilient, self-aware, and resourceful, as, such as this self-selecting group, they seek out alternative solutions for distress related to their traumas.

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References

- American Psychological Association. 2018. Stress in America: Generation Z. In *Stress in America™ Survey*. Washington, DC: American Psychological Association, pp. 1–11.
- Arnett, Jeffrey Jensen. 2000. Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist* 55: 469. [[CrossRef](#)] [[PubMed](#)]
- Astor, Maggie. 2020. Gen Z, Tell Us About Your Political Views. *The New York Times*, August 28.
- Battles, Allison R., Adrian J. Bravo, Michelle L. Kelley, Tyler D. White, Abby L. Braitman, and Hannah C. Hamrick. 2018. Moral injury and PTSD as mediators of the associations between morally injurious experiences and mental health and substance use. *Traumatology* 24: 246. [[CrossRef](#)]
- Bijttebier, Patricia, Margot Bastin, Sabine Nelis, Sofie Weyn, Koen Luyckx, Michael W. Vasey, and Filip Raes. 2018. Temperament, repetitive negative thinking, and depressive symptoms in early adolescence: A prospective study. *Journal of Psychopathology and Behavioral Assessment* 40: 305–17. [[CrossRef](#)]
- Bollinger, Andreas R., Carlos A. Cuevas, Melanie J. Vielhauer, Erin E. Morgan, and Terence M. Keane. 2008. The operating characteristics of the PTSD Checklist in detecting PTSD in HIV+ substance abusers. *Journal of Psychological Trauma* 7: 213–34. [[CrossRef](#)]

- Buechner, Barton, and Jeremy Jinkerson. 2016. Are moral injury and PTSD distinct syndromes?: Conceptual differences and clinical implications. In *Veteran and Family Reintegration*. Edited by M. Guilarte and B. Buechner. Santa Barbara: Fielding Graduate University Press, pp. 47–79.
- Chopik, William J., and Kevin J. Grimm. 2019. Longitudinal changes and historic differences in narcissism from adolescence to older adulthood. *Psychology and Aging* 34: 1109. [[CrossRef](#)]
- Cohen, Adam B., and Harold G. Koenig. 2003. Religion, religiosity and spirituality in the biopsychosocial model of health and ageing. *Ageing International* 28: 215–41. [[CrossRef](#)]
- Cole, Brenda S., Clare M. Hopkins, John Tisak, Jennifer L. Steel, and Brian I. Carr. 2008. Assessing spiritual growth and spiritual decline following a diagnosis of cancer: Reliability and validity of the spiritual transformation scale. *Psycho-Oncology: Journal of the Psychological, Social and Behavioral Dimensions of Cancer* 17: 112–21. [[CrossRef](#)]
- Danhauer, Suzanne C., L. Douglas Case, Richard Tedeschi, Greg Russell, Tanya Vishnevsky, Kelli Triplett, Edward H. Ip, and Nancy E. Avis. 2013. Predictors of posttraumatic growth in women with breast cancer. *Psycho-Oncology* 22: 2676–83. [[CrossRef](#)]
- De Castella, Rosemary, and Janette Graetz Simmonds. 2013. “There’s a deeper level of meaning as to what suffering’s all about”: Experiences of religious and spiritual growth following trauma. *Mental Health, Religion & Culture* 16: 536–56.
- deRoon-Cassini, Terri A., Anthony D. Mancini, Mark D. Rusch, and George A. Bonanno. 2010. Psychopathology and resilience following traumatic injury: A latent growth mixture model analysis. *Rehabilitation Psychology* 55: 1. [[CrossRef](#)]
- DiGangi, Julia A., Daisy Gomez, Leslie Mendoza, Leonard A. Jason, Christopher B. Keys, and Karestan C. Koenen. 2013. Pretrauma risk factors for posttraumatic stress disorder: A systematic review of the literature. *Clinical Psychology Review* 33: 728–44. [[CrossRef](#)]
- Eagan, Kevin, Ellen Bara Stolzenberg, H. B. Zimmerman, Melissa C. Aragon, H. Whang Sayson, and Cecilia Rios-Aguilar. 2017. *The American Freshman: National Norms Fall 2016*. Los Angeles: Higher Education Research Institute, UCLA.
- Eagan, Kevin, Ellen Bara Stolzenberg, Joseph J. Ramirez, Melissa C. Aragon, Maria Ramirez Suchard, and Sylvia Hurtado. 2014. *The American Freshman: National Norms Fall 2014*. Los Angeles: Higher Education Research Institute, UCLA.
- Gallagher, E. M. 1993. Religious Diversity in Graduate Education in Professional Psychology. Master’s Equivalency thesis, University of Iowa, Iowa City, IA, USA. Unpublished.
- Good, Marie, and Teena Willoughby. 2008. Adolescence as a sensitive period for spiritual development. *Child Development Perspectives* 2: 32–37. [[CrossRef](#)]
- Gray, Matt J., Brett T. Litz, Julie L. Hsu, and Thomas W. Lombardo. 2004. Psychometric properties of the life events checklist. *Assessment* 11: 330–41. [[CrossRef](#)] [[PubMed](#)]
- Greyson, Bruce, and Surbhi Khanna. 2014. Spiritual transformation after near-death experiences. *Spirituality in Clinical Practice* 1: 43. [[CrossRef](#)]
- Grubaugh, Anouk L., Jon D. Elhai, Karen J. Cusack, Chris Wells, and B. Christopher Frueh. 2007. Screening for PTSD in public-sector mental health settings: The diagnostic utility of the PTSD checklist. *Depression and Anxiety* 24: 124–29. [[CrossRef](#)]
- Haerberlein, Kristen, Luke Evans, Britanie Champaigne, and Paul J. Handal. 2020. Differences in Distress and Utilization of Mental Health Services between 2005 and 2018: A Potential Trend? *Psychiatric Quarterly* 91: 11–19. [[CrossRef](#)]
- Hamlat, Elissa J., Jonathan P. Stange, Lyn Y. Abramson, and Lauren B. Alloy. 2014. Early pubertal timing as a vulnerability to depression symptoms: Differential effects of race and sex. *Journal of Abnormal Child Psychology* 42: 527–38. [[CrossRef](#)]
- Hankin, Benjamin L. 2008. Cognitive vulnerability–stress model of depression during adolescence: Investigating depressive symptom specificity in a multi-wave prospective study. *Journal of Abnormal Child Psychology* 36: 999–1014. [[CrossRef](#)]
- Hankin, Benjamin L., and Lyn Y. Abramson. 2002. Measuring cognitive vulnerability to depression in adolescence: Reliability, validity, and gender differences. *Journal of Clinical Child and Adolescent Psychology* 31: 491–504. [[CrossRef](#)]

- Hardy, Sam A., Jenae M. Nelson, Joseph P. Moore, and Pamela Ebstyn King. 2019. Processes of religious and spiritual influence in adolescence: A systematic review of 30 years of research. *Journal of Research on Adolescence* 29: 254–75. [CrossRef]
- Harris, Kevin A., Desiree S. Howell, and Don W. Spurgeon. 2018. Faith concepts in psychology: Three 30-year definitional content analyses. *Psychology of Religion and Spirituality* 10: 1. [CrossRef]
- Hudson, Sheila A., Louisa A. Beckford, Stephen D. Jackson, and Michael P. Philpot. 2008. Validation of a screening instrument for posttraumatic stress disorder in a clinical sample of older adults. *Aging and Mental Health* 12: 670–73. [CrossRef] [PubMed]
- Hufford, David J. 2005. *An Analysis of the Field of Spirituality, Religion and Health*. Bryn Mawr: Metanexus Institute.
- Jinkerson, Jeremy D. 2016. Defining and assessing moral injury: A syndrome perspective. *Traumatology* 22: 122. [CrossRef]
- Kennedy, James E., Robert C. Davis, and Bruce G. Taylor. 1998. Changes in spirituality and well-being among victims of sexual assault. *Journal for the Scientific Study of Religion* 37: 322–28. [CrossRef]
- Kessler, Ronald C., Amanda Sonnega, Evelyn Bromet, Michael Hughes, and Christopher B. Nelson. 1995. Posttraumatic stress disorder in the National Comorbidity Survey. *Archives of General Psychiatry* 52: 1048–60. [CrossRef]
- King, Pamela Ebstyn, Peter L. Benson, and Linda Wagener. 2006. *The Handbook of Spiritual Development in Childhood and Adolescence*. Thousand Oaks: Sage Publications.
- Koenig, Harold G., Nathan A. Boucher, Rev John P. Oliver, Nagy Youssef, Scott R. Mooney, Joseph M. Currier, and Michelle Pearce. 2017. Rationale for spiritually oriented cognitive processing therapy for moral injury in active duty military and veterans with posttraumatic stress disorder. *The Journal of Nervous and Mental Disease* 205: 147–53. [CrossRef]
- Kopacz, Marek S., April L. Connery, Todd M. Bishop, Craig J. Bryan, Kent D. Drescher, Joseph M. Currier, and Wilfred R. Pigeon. 2016. Moral injury: A new challenge for complementary and alternative medicine. *Complementary Therapies in Medicine* 24: 29–33. [CrossRef] [PubMed]
- Lang, Ariel J., Charlene Laffaye, Leslie E. Satz, Timothy R. Dresselhaus, and Murray B. Stein. 2003. Sensitivity and specificity of the PTSD checklist in detecting PTSD in female veterans in primary care. *Journal of Traumatic Stress: Official Publication of The International Society for Traumatic Stress Studies* 16: 257–64. [CrossRef] [PubMed]
- Lehavot, Keren, and Tracy L. Simpson. 2014. Trauma, posttraumatic stress disorder, and depression among sexual minority and heterosexual women veterans. *Journal of Counseling Psychology* 61: 392. [CrossRef]
- Litz, Brett T., Nathan Stein, Eileen Delaney, Leslie Lebowitz, William P. Nash, Caroline Silva, and Shira Maguen. 2009. Moral injury and moral repair in war veterans: A preliminary model and intervention strategy. *Clinical Psychology Review* 29: 695–706. [CrossRef]
- Martin-Storey, Alexa, Geneviève Paquette, Manon Bergeron, Jacinthe Dion, Isabelle Daigneault, Martine Hébert, and Sandrine Ricci. 2018. Sexual violence on campus: Differences across gender and sexual minority status. *Journal of Adolescent Health* 62: 701–7. [CrossRef]
- Mellins, Claude A., Kate Walsh, Aaron L. Sarvet, Melanie Wall, Louisa Gilbert, John S. Santelli, Martie Thompson, Patrick A. Wilson, Shamus Khan, Stephanie Benson, and et al. 2017. Sexual assault incidents among college undergraduates: Prevalence and factors associated with risk. *PLoS ONE* 12: e0186471. [CrossRef]
- Moss, Rachel, Salvatore Babones, Alix Dietzel, Sandro Galea, Mark Aspinwall, and Monica Urban. 2019. Teaching Generation Z: A Biting Blizzard or a Breath of Fresh Air? *Times Higher Education (THE)*. September 3. Available online: <https://www.timeshighereducation.com/features/teaching-generation-z-biting-blizzard-or-breath-fresh-air> (accessed on 15 July 2020).
- Paquette, Geneviève, Alexa Martin-Storey, Manon Bergeron, Jacinthe Dion, Isabelle Daigneault, Martine Hébert, Sandrine Ricci, and Sonn Castonguay-Khounsombath. 2019. Trauma symptoms resulting from sexual violence among undergraduate students: Differences across gender and sexual minority status. *Journal of Interpersonal Violence*. [CrossRef] [PubMed]
- Read, Jennifer P., Paige Ouimette, Jacquelyn White, Craig Colder, and Sherry Farrow. 2011. Rates of DSM-IV-TR trauma exposure and posttraumatic stress disorder among newly matriculated college students. *Psychological Trauma: Theory, Research, Practice, and Policy* 3: 148. [CrossRef]
- Reetz, David R., Brian Krylowicz, and Brian Mistler. 2014. The association for university and college counseling center directors annual survey. *Aurora* 51: 60506.

- Richards, P. Scott, and Allen E. Bergin. 1997. *A Spiritual Strategy*. Washington, DC: American Psychological Association.
- Rose, Elizabeth M., John S. Westefeld, and Timothy N. Ansely. 2001. Spiritual issues in counseling: Clients' beliefs and preferences. *Journal of Counseling Psychology* 48: 61. [CrossRef]
- Ruggiero, Kenneth J., Kevin Del Ben, Joseph R. Scotti, and Aline E. Rabalais. 2003. Psychometric properties of the PTSD Checklist—Civilian version. *Journal of Traumatic Stress* 16: 495–502. [CrossRef]
- Smith-MacDonald, Lorraine A., Jean-Sébastien Morin, and Suzette Brémault-Phillips. 2018. Spiritual dimensions of moral injury: Contributions of mental health chaplains in the Canadian armed forces. *Frontiers in Psychiatry* 9: 592. [CrossRef] [PubMed]
- Smyth, Joshua M., Kristin E. Heron, Stephen A. Wonderlich, Ross D. Crosby, and Kevin M. Thompson. 2008. The influence of reported trauma and adverse events on eating disturbance in young adults. *International Journal of Eating Disorders* 41: 195–202. [CrossRef] [PubMed]
- Stolzenberg, Ellen Bara, M. Kevin Eagan, Melissa C. Aragon, Natacha M. Cesar-Davis, Sidronio Jacobo, Victoria Couch, and Cecelia Rios-Aguilar. 2019. *The American Freshman: National Norms Fall 2017*. Los Angeles: Higher Education Research Institute, University of California.
- Stolzenberg, E. B., M. C. Aragon, E. Romo, V. Couch, D. McLennan, M. K. Eagan, and N. Kang. 2020. *The American Freshman: National Norms Fall 2019*. Los Angeles: Higher Education Research Institute, UCLA.
- Ulloa, Emilio, Monica L. Guzman, Marissa Salazar, and Cassandra Cala. 2016. Posttraumatic growth and sexual violence: A literature review. *Journal of Aggression, Maltreatment & Trauma* 25: 286–304.
- Walker, Edward A., Elana Newman, Dorcas J. Dobie, Paul Ciechanowski, and Wayne Katon. 2002. Validation of the PTSD checklist in an HMO sample of women. *General Hospital Psychiatry* 24: 375–80. [CrossRef]
- Wang, Junyi, Danyang Wang, Lixia Cui, Chad M. McWhinnie, Li Wang, and Jing Xiao. 2017. The “weakest link” as an indicator of cognitive vulnerability differentially predicts symptom dimensions of anxiety in adolescents in china. *Journal of Anxiety Disorders* 50: 69–75. [CrossRef]
- Weathers, Frank W., Brett T. Litz, D. Herman, J. Huska, and T. Keane. 1994. *The PTSD Checklist-Civilian Version (PCL-C)*. Boston: National Center for PTSD.
- Weathers, Frank W., Brett T. Litz, Terence M. Keane, Patrick A. Palmieri, Brian P. Marx, and Paula P. Schnurr. 2013. *The PTSD Checklist for DSM-5 (PCL-5)*; Boston: National Center for PTSD. Available online: <https://www.ptsd.va.gov/professional/assessment/adult-sr/ptsd-checklist.asp> (accessed on 12 July 2020).
- Wieland, Diane M., and Brenda G. Kucirka. 2020. Helicopter Parenting and the Mental Health of iGen College Students. *Journal of Psychosocial Nursing and Mental Health Services* 58: 16–22. [CrossRef] [PubMed]
- Xiao, Jing, Yu Qiu, Yini He, Lixia Cui, Randy P. Auerbach, Chad M. McWhinnie, and Shuqiao Yao. 2016. ‘Weakest Link’ as a cognitive vulnerability within the hopelessness theory of depression in Chinese university students. *Stress and Health* 32: 20–27. [CrossRef]

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