

Is Religiosity a Protective Factor against Suicide? Evaluating Suicidality and Religiousness in Psychiatric Inpatient Population Utilizing Sheehan Suicide Tracking Scale (S-STSS) and Columbia Suicide Severity Rating Scale (C-SSRS)

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Abstract

Background: Suicide is a major public health concern. Studies have suggested that Religiousness can be protective of suicidality. We objectively wanted to explore this relationship.

Methods: Patients admitted to a psychiatric hospital were invited to participate in the study to compare the psychometric properties of Sheehan-Suicidality Tracking Scale (S-STSS) and Columbia Suicide Severity Rating Scale (C-SSRS). 199 patients consented and completed the study including an investigator-designed Risk Assessment Measure (RAM) that included questions about belief in god, attendance of services, and moral objections to suicide. Statistical analysis was performed.

Results: Most patients reported that they believed in god (86.9%, $n = 172$) and believed that suicide is an immoral act (62.4%, $n = 123$). Fewer patients reported that they regularly attended religious services (38.7%, $n = 77$). On S STS, patients who believed in god did not score significantly lower on the suicidal ideation subscale ($p = 0.21$), but they did score significantly lower on the suicidal behavior subscale ($p = 0.02$) and trended to score significantly lower on the total scale ($p = 0.06$). On C SSRS, patients who believed in god and objected to suicide scored lower on suicide attempts ($p < 0.05$), similarly patients who believed in god and attended services scored significantly

lower on the suicidal ideation subscale ($p < 0.04$), the suicidal behavior subscale ($p < 0.04$), and the total scale ($p < 0.03$).

Conclusions: Our findings suggest that religiosity may be a protective factor for suicidality.

Keywords: Suicide; Suicidality; suicide ideation; Religion; Psychiatric inpatient

1. Introduction

Globally, approximately 800,000 people per year die from suicide. In 2016 it was the 18th leading cause of death worldwide, accounting for 1.4% of total deaths (Suicide Data [1]). Low- and middle-income countries account for the majority of global suicide cases (Suicide Data [1]). In 2018 approximately 48,000 died by suicide in United States (US), where it was the 10th leading cause of death, and it was the 2nd leading cause of death for individuals aged 10-34 (Leading Causes of Death Reports [2]).

Suicide is a phenomenon which largely transcends age, gender, ethnicity/race and socioeconomic status; however, across all of these groups, certain risk factors are common. In the US, the rates of suicide have been on the rise for the last 20 years and the following risks have generally remained consistent over that time. Rates of suicide are higher in men than in women (4:1), while women attempt suicide 4 times more than men. Middle-aged (45-54) and older (65+) adults are the most at risk age group (Statistics-Suicide [3]; Suicide Data [1]; Suicide Statistics, Aged Adjusted Rates [4]). Racially and ethnically, the rates of suicide are highest in White and Native American and Native Alaskans; Asian/Pacific Islander, Black and Hispanic Americans have much lower rates of suicides (Statistics-Suicide [3]; Suicide Statistics, Aged Adjusted Rates [4]). Certain other demographic risk factors related to suicide have also been elucidated. For example, studies have shown that military members and veterans make up a disproportionate amount of suicides in the US (Facts About Veteran Suicide [5]).

Suicidality is a term used to encompass a patient's disposition to cause self-harm. It is composed of three constituent behaviors: completed suicide, suicide attempt and suicide ideation (SI) (DeBastiani and De Santis [6]; Statistics-Suicide [3]). Suicide is defined as death caused by self-directed behavior with the intent to die; a suicide attempt is any non-fatal, self-directed behavior with intent of dying as a result; SI is thinking about, considering, or planning to commit suicide (Statistics-Suicide [3]). The overwhelming majority (90-95%) who die by suicide have either a diagnosed or have a diagnosable mental health disorder. The etiologies included, but are not limited to, underlying neuropathology, trauma, acute stress or feelings of hopelessness (Berardelli et al. [7]; DeBastiani and De Santis [6]). Recognizing suicidality in patients is of the utmost importance for clinicians.

Health care providers need to appropriately assess individuals to identify risks for suicidality, and to determine optimal treatment recommendations for those who are at risk for suicide. Likewise, it is important to recognize

factors which may be protective against suicidality. For instance, research has shown that strong friends and family social support may be a protective factor against suicide in some populations (Meadows, Kaslow, Thompson, Jurkovic [8]; Nock et al. [9]). Having children also seems to provide a protective effect against suicide; however, parents of children with a psychiatric illness or a child who dies have been shown to increase the risk of suicide (Qin, Mortensen [10]). Intrinsic characteristics such as self-efficacy and self-esteem seem to also play a protective role against suicide (Meadows et al. [8]; Nock et al. [9]). One potential protective factor, which is sometimes overlooked by clinicians, is religiousness.

For the majority of Americans, religion is considered to be an important part of their lives (Religious Landscape Study [11]). In a 2017 Pew research poll of 35,000 Americans, 53% of responders considered religion to be “very important” in their lives, and of those, 60% stated that they attended religious services (temple, mosque, communion, etc.) at least once per week. Results from that poll found that individuals who believed in God were more likely to have feelings of spiritual peace and wellbeing than those who were not religious. The participants who reported religion as “very important” in their lives were more likely to use their religion as their primary guidance in determining moral right and wrong; whereas those who were not religious were more likely to use philosophy/reason, common sense and science. Moreover, religious individuals were more likely than others to believe in absolute standards of right and wrong, and the large majority believed in some conception of heaven and hell (Religious Landscape Study [11]). Suicide is largely condemned as a moral wrong in the most practiced religions around the world (Bible, Old Testament; Byron [12]; Keown [13]; Qur'an; Religions, Hinduism [14]; Saunderson [15]; Siman 345 [16]).

Studies have suggested that religiosity is associated with fewer negative mental health outcomes including suicidality (Benjet et al. [17]; Bonelli, Koenig [18]; VanderWeele, Li, Kawachi [19]). Suicidal behavior (SB) is more common among individuals who do not consider themselves as religious and do not have moral objections to suicide (Gearing, Alonzo [20]; Gearing, Lizardi [21]). However, few studies have examined suicidality and have used a standardized suicide rating scales such as the Sheehan-Suicidality Tracking Scale (S-STS) or the Columbia Suicide Severity Rating Scale (C-SSRS) to study the effect that religious belief and religious involvement have on objective measures of suicidality. In this study, we utilized standardized suicide assessments to examine the relationships between religious involvement, religious behavior, SI, and SB in adults admitted to an urban psychiatric hospital. It was hypothesized that religious beliefs would be protective against suicidality.

2. Methods

The study was approved by the Institutional Review Board. Study participants were adult psychiatric inpatients who were recruited from an urban hospital for a cross-sectional, randomized, non-interventional methods study. At the time of admission, all patients were approached by the hospital staff or an investigator regarding their interest in participating in the study. Study goals included comparing two standardized suicide assessment instruments

((Sheehan-Suicidality Tracking Scale (S-STS) and Columbia Suicide Severity Rating Scale (C-SSRS)) and answering an investigator-designed Risk Assessment Measure (RAM) questionnaire identifying additional risk or protective factors for SI and SB. Exclusion criteria include psychosis, and inability to understand and read english. A total of 199 patients consented to participate in the study. Virtually all patients completed the S-STS, C-SSRS, and RAM questionnaires within the first three days of their hospital admission, administered by the research team who were independent from their clinical providers. Participants completed a self-report form of demographic information inquired about age, gender, race, ethnicity, marital status, and highest level of education. All participants were asked to respond to S STS and C SSRS in two time periods (i) past month (ii) over their lifetime. Data was collected and analyzed as part of an original study comparing S-STS and C-SSRS in adult psychiatric inpatients.

2.1 S-STS

S-STS is a systematic and standardized suicide rating scale. The interview begins with screening questions about any history of accidents, thoughts of not living and thoughts of hurting or injuring one's self. S-STS screen individuals about suicidal ideation and behavior. S STS can be used as clinician rated scale or patient rated scale.

2.2 C-SSRS

C-SSRS is a semi-structured interview that inquires about SI severity and intensity, suicidal behavior, and non-suicidal self-injurious behavior. The interview begins with two screening questions that elicit the patient's history of SI. If the patient indicates a history of active suicidal thoughts, the interviewer proceeds by determining the patient's most severe category of ideation and behavior. C-SSRS can be used as a clinician rated scale or patient rated scale.

2.3 RAM

Based on epidemiological data, a 39-item physician-administered questionnaire was created by the investigators. These 39 items inquire about risks and protective factors of suicidality that had been reported in the literature. RAM questionnaire was asked of all participants prior to the conclusion of their study participation session. RAM questionnaire had a subsection on religiosity which included the following questions a) belief in god b) attendance of religious services c) moral objection to suicide.

To examine the relationship between religiosity and suicidality utilizing C-SSRS, a secondary analysis was performed using chi-square tests. ϕ was calculated to determine the magnitude of possible relationships. Similarly, S-STS, a two-way analysis of variance was employed to compare scores on the S-STS composite scale and subscales between patients who reported religious involvement and belief, and patients who did not report religious involvement or belief.

3. Results

3.1 Sample characteristics

Data were collected and analyzed as part of an original study comparing suicide assessment instruments in adult psychiatric inpatients ($n = 199$). Participant demographics are listed in Table 1. Most patients reported that they believed in god (86.9%, $n = 172$) and believed that suicide is an immoral act (62.4%, $n = 123$). Fewer patients reported that they regularly attended religious services (38.7%, $n = 77$).

Factor	N (%)	Factor	N (%)
Gender		Race (participants may check multiple options)	
Male	86 (43.2)	American Indian or Alaska Native	9 (4.5)
Female	113 (56.8)	Asian	4 (2.0)
		Black or African-American	37 (18.6)
Marital Status		Native Hawaiian or other Pacific Islander	2 (1.0)
Cohabiting	12 (6.0)	White	157 (78.9)
Divorced	33 (16.6)		
Married	40 (20.1)	Highest Level of Education	
Separated	19 (9.5)	Grades 1-8	2 (1.0)
Single	89 (44.7)	Grades 9-11	21 (10.6)
Widowed	6 (3.0)	High School Graduate or Equivalent (GED)	79 (39.7)
		Some College or Technical School	67 (33.7)
Ethnicity		Bachelor's Degree	25 (12.6)
Hispanic or Latino	26 (13.1)	Graduate Degree	5 (2.5)
Not Hispanic or Latino	172 (86.4)		

Table 1: Participant demographics.

3.2 C-SSRS

To examine whether religiosity was related to outcomes on the C-SSRS, a secondary analysis was performed using chi-square tests. ϕ was calculated to determine the magnitude of possible relationships. Lifetime or past month history of SI was not less prevalent among those who believed in god or who had moral objections to suicide. However, those who regularly attended religious services were less likely to indicate a past month history of passive ($\phi = -0.16$; $p < 0.05$) and active non-specific SI ($\phi = -0.14$; $p < 0.05$). Patients who believed in god and patients who had moral objections to suicide were less likely to have lifetime and past month history of suicide attempt; ϕ s ranged from -0.17 to -0.23 ; p 's < 0.05 . They were also less likely to have lifetime history of SB ($\phi = -0.15$, $\phi = -0.21$; $p < 0.05$). Past month history of SB was less common among those who believe in god ($\phi = -0.15$; $p < 0.05$).

and those who regularly attend religious services ($\phi = -0.17$; $p < 0.05$). This relationship trended for those who had moral objections to suicide but missed significance.

CSSRS Variable	Time Period	Believe in God		Attend religious services		Believe suicide is immoral	
		ϕ	p	ϕ	p	ϕ	p
Suicidal Ideation							
Wish to be dead	LT	-0.09	0.23	-0.08	0.29	-0.17*	0.02*
	PM	-0.13	0.07	-0.16*	0.03*	-0.11	0.11
Non-specific active suicidal thought	LT	-0.11	0.13	-0.06	0.37	-0.13	0.06
	PM	-0.04	0.56	-0.14*	0.05*	-0.11	0.11
Method without intent to act	LT	-0.02	0.79	-0.08	0.26	-0.03	0.71
	PM	-0.05	0.56	0.01	0.91	-0.09	0.25
Some intent to act without specific plan	LT	-0.05	0.52	-0.06	0.45	-0.16*	0.04*
	PM	-0.06	0.49	-0.06	0.49	-0.20*	0.01*
Active ideation, method & plan	LT	-0.01	0.91	-0.03	0.66	-0.12	0.12
	PM	-0.08	0.35	-0.08	0.30	-0.14	0.08
Suicidal Behavior							
Suicide Attempt	LT	-0.18*	0.01*	-0.10	0.16	-0.23*	0.01*
	PM	-0.19*	0.01*	-0.07	0.31	-0.17*	0.02*
Interrupted Attempt	LT	0.02	0.78	0.004	0.96	0.04	0.56
	PM	0.01	0.92	-0.05	0.46	0.11	0.13
Aborted Attempt	LT	0.02	0.80	0.01	0.91	-0.01	0.86
	PM	0.01	0.86	-0.08	0.24	0.01	0.86
Preparatory Actions	LT	-0.03	0.68	-0.06	0.40	-0.002	0.98
	PM	0.04	0.60	-0.05	0.53	-0.13	0.08

LT: Lifetime; PM: Past Month

* Results were statistically significant

Table 2: C-SSRS data.

3.3 S-STIS

Next, two-way analyses of variance were used to compare scores on the S-STIS composite scale and subscales between patients who reported religious involvement and belief and patients who did not report religious

involvement and belief. Most patients reported that they believed in god (86.9%, $n = 172$) and believed that suicide is an immoral act (62.4%, $n = 123$). Fewer patients reported that they regularly attended religious services (38.7%, $n = 77$). Patients who believed in god did not score significantly lower on the SI subscale ($p = 0.21$), but they did score significantly lower on the SB subscale ($p = 0.02$) and trended to score significantly lower on the total scale ($p = 0.06$). Patients who regularly attended religious services scored significantly lower on the SI subscale ($p = 0.04$), the SB subscale ($p = 0.04$), and the total scale ($p = 0.03$). Patients who indicated that they believed suicide to be immoral scored significantly lower on the SI subscale ($p = 0.02$) and the total scale ($p = 0.02$) and trended to score significantly lower on the SB subscale ($p = 0.10$).

Religious Belief/Involvement	Scale	P-value
Believing in god	Suicidal Behavior	0.02
Regularly attended religious services	Suicidal Ideation	0.04
	Suicidal Behavior	0.04
Believe suicide to be immoral	Suicidal Behavior	0.02

Table 3: S-STs P-values.

4. Discussion

Over the last 20 years, the rate of suicide has been on the rise. In United States, the rate is highest since start of this century. Researchers and clinicians have been hard at work to understand this rise and how to decrease the rate of suicide. Literature search has revealed numerous risk and protective factors which can impact suicidality, including religiosity. The majority of these studies investigated the relationship between suicide and religion in an outpatient, non-psychiatric settings. These studies have found religion to be a protective factor in suicidality. A majority of these studies have tried to assess the relationship between religion, SI and SB by using subjective measures. We wanted to explore the relationship between suicide and religiousness utilizing two objective suicide rating scales C SSRS and S STS in an inpatient psychiatric population. We felt that exploring this relationship in an inpatient psychiatric setting where the patients are generally sicker and are at a higher risk for suicidality would provide more comprehensive data into the relationship between suicidality and religiousness. Because religion is something very personal and at times individuals are not comfortable with discussing their religious beliefs, we were cognizant of this and asked the following questions 1) Do you believe in god 2) Do you attend religious services 3) Do you have moral objection to suicide, to determine our cohort's religiosity. Belief in God is the cornerstone of all monotheistic religions.

In our cohort 86.9% participants believed in god. A systematic review of 89 studies on religious affiliations and its relationship to suicide concluded that religious affiliation did not protect against SI but did find an inverse relationship between SB and patient's religiousness (Lawrence et al. [22]). Most of the available research reinforces

the role of religiousness in protection against SB but there is no consensus on the role of religiousness as a protective factor against SI. A systematic review of 43 studies on mental health disorders, which included only 3 studies concerned with suicide, concluded that religious affiliation was associated with a decrease in both SI and SB (Bonelli, Koenig [18]). At present, from the data available, it appears that religiousness is protective of SB but there is conflicting data supporting religiousness as a protective factor against SI. In our cohort, the majority of participants reported believing in god, but believing in god was not associated with a decrease in the frequency of SI; however, it was associated with a significant decrease in SB on suicidal behavior subscale. The decrease in SB but not SI is consistent with previously reported data.

In our cohort, participants who identified themselves as religious and attended religious services showed a significant decrease in both SI, SB, and the total suicide scale score. This was significantly different from the patients who believed in god but did not attend religious services. Data obtained from a General Social Survey of 30,650 participants between 1978 and 2010 suggested that attending religious services was behind the preventive effect of religiousness in suicide (Kleiman, Liu [23]). It appears that being religious and attending religious services provided more protection against both SB and SI which was not the case for religious individuals who did not attend religious services. Furthermore, data from a Canadian epidemiological survey of 36,984 individuals showed that participants who reported being less religious had a higher likelihood of reporting a suicidal act than participants who were involved in weekly religious activities (Blackmore et al. [24]). Attending religious services as a protection against SI and SB is also supported by a Turkish study that examined deaths between 2000 and 2009 during the month of Ramadan. They found that during this holy month of fasting from sunrise to sunset and an increased involvement in religious activities, Muslim deaths by suicide decreased (Demirci, Dogan, Koc [25]). This decrease in deaths by suicide may be due to the higher spirituality, increase social interaction and increase engagement in religious activities such as congregational prayers that are held daily during that month. Similarly, data obtained from 121 adolescents who were subjected to bullying and peer victimization showed that private religious practices and religious activities were associated with decreased SI (Cole-Lewis, Gipson, Opperman, Arango, King [26]). Neeleman et al. processed the data of 28085 individuals from 19 Western countries between 1989 and 1990 to examine the relationship between suicide, suicide tolerance, and religion. They proposed that religious activity attendance was associated with lower suicide rates in females but not in males (Neeleman, Halpern, Leon, Lewis [27]). A study of 89,708 women from 196 to 2010 in the United States observed the relationship between attending religious services attending and suicide showed that women who attended a religious service once a week had a 5-fold decrease in suicide risk compared to those who never attended religious services (VanderWeele et al. [19]). In our cohort, attending religious services was a protective factor for both SB and SI. These results are congruent with previous studies that showed a preventive role of religious attendance against both SB and SI. It is possible that attending religious services can provide community support and decrease the chance of social alienation, which is theorized to be a major component of SB (Ribeiro et al. [28]). Our cohort has a gender distribution of 56.8 %

females vs 43.2 % males and we did not detect a significant difference between the two genders regarding religiousness or religious attendance being protective against SI or SB.

About two thirds of our participants believed that suicide was an immoral act. Participants who believed that suicide was immoral reported significantly less SI compared to other participants. Participants who reported themselves to be religious and who believed that suicide was immoral reported significantly less SI and SB. In 2011, Dervic et. al conducted a study of 149 bipolar depression patients of whom 51 reported being religious. They reported that patients with religious affiliations scored higher on the moral/religious objection to the suicide subscale on the reasons for living inventory and proposed that the moral/religious objection may be behind the protective role of religion in suicide (Dervic et al. [29]).

Would being non-religious put individuals at a higher risk to suicidality? We did literature search to look at data exploring the relationship between individuals who considered themselves as non-religious and suicidality i.e. SI and SB. In 2015, a Brazilian web-based study assessed SB in 48,569 participants using an instrument based on the Suicidal Behaviors Questionnaire. Data obtained showed that participants who considered themselves as non-religious were at a higher risk of suicide compared to participants who considered themselves as religious (de Araújo, Mazzochi, Lara, Ottoni [30]). Benjet C et al assessed 4189 first-year students in 6 universities in Mexico for psychopathologies to try identify risk factors found that having no religion is associated with an increased risk in SB (Benjet et al. [17]). Similarly, another study which consisted of a survey of 279 college students in Idaho explored the relationship between SI, religiosity, and hopelessness. Analysis of the data showed that students who were less religious tended to report more SI (Simonson [31]). This data suggests that individuals who consider themselves non-religious have a higher lifetime risk for SI and SB.

We also need to be mindful that in certain circumstances religion might not be as protected as reported. Analyzing data from 129 adolescents suffering from depression and suicidality revealed that religious adolescents who were attracted to the same sex individuals reported more SB than non-religious adolescents who were attracted to the same sex individuals (Shearer et al. [32]). Another study of 2949 Lesbian, Gay, Bisexual, and Transgender (LGBT) youth sought to understand how religiosity impacts suicidality in LGBT individuals and found that LGBT youth raised in a religious environment have a higher risk of SI and SB compared to other LGBT youth (Gibbs, Goldbach [33]). In these two studies, instead of religion being a protective factor for SI and SB, it increased suicidality in LGBTQ adolescent and youth. A possible explanation for this effect of religion on suicidality in these studies could be the internal conflict between ones religious beliefs and sexual orientation which is contrary to what is appropriate and accepted in one's religion. In our study, we did not assess for circumstances when religion might be a risk rather than a protective factor for suicide.

Assessing an individual's suicidal risk is a complex process. In addition to numerous risk and protective factors influencing individual's suicidal risk, clinicians regardless of their beliefs, should also consider individuals' religiousness including their belief in god, attendance of religious services, and moral objections to suicide as essential risk screening questions. Clinicians should also be mindful that in some circumstances, individuals' internal conflicts with their religious doctrine might negate the protective effects of religion on suicidality. Our study used two objective suicide rating scales, C SSRS and S STS to assess suicidality. Religiousness was determined by asking specific questions. Our cohort were individuals who were admitted to an acute psychiatric inpatient unit making our cohort a high acuity cohort. We recommend further exploration of the relationship between religiousness and suicidality by utilizing other objective suicide rating scales and in different clinical settings.

5. Limitations

There are some limitations such as a limited sample size. The patients were selected from an inpatient psychiatric setting which captures more severe patients. We did not assess the participants' spirituality, nor did we identify different religions and their separate impact on suicidality.

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Conflicts of Interest

None reported.

Ethics

The study was approved by the Penn State College of Medicine IRB.

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