Suicidal Ideation, Plans, and Attempts in a Sample of Iranian Students: Prevalence and Some New Risk and Protective Factors

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Abstract

Although suicide is a major cause of death among young people worldwide, few studies have been done on the prevalence of suicidal ideation among Muslim students. In addition, no studies were found on the relationship between students’ suicidal ideation with premarital romantic relationships and the five daily Islamic prayers. The aim of this study was to assess the prevalence of suicidal ideation in a sample of Iranian university students, and to study its relationship with romantic relationships and the five daily Islamic prayers. The methodology involved 421 available Iranian university students completing a questionnaire asking about current and past suicidal ideation, suicide attempts, and associated potential risk/protective factors. Of the subjects, 15.9% reported lifetime suicidal ideation, 11.9% lifetime suicide plan, and 7.8% lifetime suicide attempt. Male gender, marital separation, substance use, and other-sex romantic relationships were associated with increased odds of lifetime suicidal ideation (p<0.05), while...
female gender, the five daily Islamic prayers, and religious salience were associated with reduced odds. Limitations of this study include its small sample size and low generalizability. Suicidal ideation may be more prevalent than expected in the university students. The role of Islamic prayers and romantic other-sex relationships deserves further study in this regard.

**Keywords**: suicide, students, religion, romantic, prayers

Suicide is one of the leading causes of death among Americans 15 to 24 years old (Peters, Kochanek, & Murphy, 1998), and suicide rates among students are reported to be similar to other young people in the United States (Hawton, Bergen, Mahadevan, Casey, & Simkin, 2012; Wasserman, Cheng, & Jiang, 2005). Multiple studies in the United States have shown that about between 2 and 11 percent of the college students report suicidal ideation in the previous 4 weeks (Eisenberg, Gollust, Golberstein, & Hefner, 2007; Garlow et al., 2008). One study showed that the vast majority of students with current suicidal ideation (84%) were not receiving any psychiatric treatment at the time of assessment (Garlow et al., 2008).

Students’ suicidal ideations and/or attempts have been regarded as major health problems in other countries too. For example, in China, suicide is reported to be an important health issue in college students, and is the leading cause of death among people 15 to 34 years of age (Wang et al., 2017). A meta-analysis on about 88000 college students in China showed that the prevalence of 12-month suicide attempts was 2.9% (Yang, Zhang, Sun, Sun, & Ye, 2015).

In Japan, results of a 23-year serial study of the prevalence and characteristics of death and suicide among 8.26 million Japanese college students showed that suicide accounted for 42.4% of all deaths over 23 years, and only 16% had received mental health services prior to the suicide (Uchida & Uchida, 2017). Similar studies have been published on students’ suicide in other countries, including Australia (Delfabbro, Winefield, & Winefield, 2013), Tunisia (Amami, Aloulou, Elleuch, & Aribi, 2013), Taiwan (Chou, Ko, Wu, & Cheng, 2013), and others.

Suicide is the end point of a continuum, from suicidal ideation to fatal suicide, and has complex etiology (Knox, Yeates, & Caine, 2004). The risk factors of suicidal ideation among students may or may not be similar to those affecting other age groups. Previously reported suicide risk factors in students include depressive symptoms, monetary debt, burnout, high emotional exhaustion, low physical and mental quality of life, eating disorders, conduct problems (Dyrbuye et al., 2008; Wichstrom, 2000), living alone or with someone other than family members (Brener, Hasan, & Barrios, 1999; Wichstrom, 2000), harmful life events and little family support (Dubow, Kausch, Blum, Reed, & Bush, 1989), delinquency, illegal drug use, school problems, teacher
problems, the suicide of family or friends (Feigelman & Gorman, 2008), and injury-related risk behaviors (Barrios, Everett, Simon, & Brener, 2000).

A recent meta-analysis of 20 studies on suicide attempt in several Iranian provinces suggested that family conflict (32% of suicide attempt cases), marital problems (26% of suicide attempt cases), economic constraints (12% of suicide attempt cases), and educational failures (5% of suicide attempt cases) were the most prevalent reported risk factors (Nazarzadeh et al., 2013). Nevertheless, there are very few published studies on suicidal ideation in Iran, especially among students (Izadinia, Amiri, Jahromi, & Hamidi, 2010); and some variables like romantic other-sex relationships, religiosity, and the performing the five daily Islamic prayers have not been the focus of attention in any of these studies (Davaji, Valizadeh, & Nikamala, 2010; Izadinia et al., 2010; Mofidi, Ghazinour, Salander-Renberg, & Richter, 2008).

Method

Procedure

A research assistant attended randomly selected university classes, briefly described the research process, assured confidentiality and the voluntary nature of the study, and spread the anonymous research questionnaires to all of the students present in the class. After completing the research questionnaires, students were informed that psychological/psychiatric care will be offered to any who felt it was necessary or had current suicidal ideation. We could not actively identify students in imminent risk of suicide because the study questionnaires were anonymous. Our study was ethically approved by the review board of the Behavioral Sciences Research Center, Shahid Beheshti University of Medical Sciences.

Participants

The sample consisted of 421 university students (136 males and 285 females) who voluntarily participated in the study. The only inclusion criterion was to be a university student; there were no specific exclusion criteria. All of the students present in the classes agreed to voluntarily participate in the study. The mean age was 20 (±2) years (range 18-36). All of the students except one (99.7%) self-identified as Muslims, and 98.8% (416 subjects) as Shia Muslims.

Measures

The study questionnaire consisted of questions regarding demographic data and the study variables. The questions regarding suicidal ideation, attempts,
and plans in this study were similar to questions used in several previous studies (Barrios et al., 2000; Bertolote et al., 2005; Feigelman & Gorman, 2008). For example, Barrios and colleagues (2000) used the following questions:

a. “During the past 12 months, did you ever seriously consider attempting suicide?”;

b. “During the past 12 months, did you make a plan about how you would attempt suicide?”;

c. “During the past 12 months, how many times did you actually attempt suicide?”; and

d. “If you attempted suicide during the past 12 months, did any attempt result in an injury, poisoning, or overdose that had to be treated by a doctor or nurse?”

Bertolote and colleagues (2005) used similar questions, thought less fixed temporally: “Have you ever seriously thought about committing suicide?”; “Have you ever made a plan for committing suicide?”; and “Have you ever attempted suicide?” (Bertolote et al., 2005).

We did not use questionnaires like the Beck Scale for Suicide Ideation, because we did not find sufficient empirical evidence supporting the concurrent validity of such questionnaires. For example, the correlation score between Beck Scale for Suicide Ideation and the suicide item of the Beck Depression Inventory was only about 0.41 (Beck, Kovacs, & Weissman, 1979). Therefore, simple, straightforward questions would likely be more useful and feasible for screening suicidal ideation in this sample of students. The questions we used, organized by temporality and theme, are as follows:

**Lifetime hopelessness:**

“Which of the following sentences better describes your condition? A. There has been occasion(s) in my life that I experienced severe hopelessness; B. I have never experienced severe hopelessness in my entire life.”

**Present hopelessness:**

“Right now, do you feel severe hopelessness? A. Yes; B. No”

**Lifetime death wish:**

“Which of the following sentences better describes your condition? A. There has been occasion(s) in my life that I seriously wished to die; B. I have never seriously wished to die in my entire life.”
Present death wish:

“Right now, do you seriously wish to die? A. Yes; B. No”

Lifetime suicidal ideation:

“Which of the following sentences better describes your condition? A. There has been situation(s) in my life, even of short duration, that I seriously decided to attempt suicide; B. I have never seriously decided to attempt suicide in my entire life.”

If the participant chose A, he/she was asked to answer the following two questions: “Approximately how many times this kind of situation happened in your life?” and, “When was the last time you seriously decided to attempt suicide?”

Present suicidal ideation:

“Right now, do you seriously want to attempt suicide? A. Yes; B. No”

Lifetime suicide plan:

“Which of the following sentences better describes your condition? A. There has been situation(s) in my life that I had a specific plan to kill myself (for example, thinking of obtaining hazardous material or tools or thinking of a specific time or situation to attempt suicide); B. I have never had a specific plan to attempt suicide in my entire life.”

If the participant chose A, he/she was asked to answer the following three questions: “Approximately how many times this situation happened in your entire life?”; “What was the main suicide way or tool that you thought of?” and, “When was the last time you had a specific suicide plan?”

Present suicide plan:

“Right now, do you have a specific suicide plan? A. Yes; B. No”

Lifetime suicide attempt:

“Which of the following sentences better describes your condition: A. There has been situation(s) in my life that I attempted suicide; B. I have never attempted suicide in my entire life.”

If the participant chose A, he/she was asked to answer the following four questions: “How many times did you have this kind of situation in your life?”;
“What was the main suicide way(s) or tool(s) that you used?”; “When was the last time you attempted suicide?”; and, “How many of your suicide attempts led to at least one night’s stay in the hospital?”

Other-sex romantic relationship:

“Some people have reciprocal romantic relationships with someone from the other sex. Which of the following statements better represents your condition? A. I have romantic relationship(s) with the other sex now and I had such relationships in the past; B. I had romantic relationship(s) with the other sex in the past but I do not have such relationships now; and C. I never had any romantic relationship(s) with the other sex in my life.”

The five daily Islamic prayers:

“Which of the following statements better represents your condition? A. I perform all the five daily Islamic prayers; B. I perform the five daily Islamic prayers most of the times; C. I do not perform the five daily Islamic prayers most of the times; D. I do not perform the five daily Islamic prayers at all.”

Religious salience:

“How much religion (including religious beliefs, attitudes, or behaviors) is important for you in your personal life? A. None; B. Little; C. Somewhat little; D. Somewhat much; E. Much; F. Very much.”

This question is similar to other previous studies studying religious salience (Gonzalez, 2011; Jacob & Kalter, 2013).

Substance use:

“Please mark the relevant choice if you regularly use any of the following substances. A. Alcohol; B. Cigarettes; C. Opium or opium-like substances (Codeine, Morphine, Heroin, Tramadol); D. Marijuana; E. Other substances; F. I do not regularly use any addictive substances.”

Marital status:

“Please specify your marital condition, A. Never married; B. Married; C. Widowed; D. Separated; E. Divorced.”


Life-time psychological visits, psychiatric visits, and psychiatric treatment:

The students were asked to mark each of the following sentences as true or false: “A. I had at least one psychiatric visit in my life. B. I had at least one psychological visit or consulting session in my life. C. I have used prescribed psychiatric medicines for at least one month.”

Data Analysis

Chi-square was used to compare the students with lifetime suicidal ideation with those who never had suicidal ideation. Odds ratios and relative risks were calculated. The significant differences were then used in a logistic regression analysis model to predict the lifetime suicidal ideation.

Results

Table 1 shows the frequency of present and lifetime hopelessness, death wish, suicidal ideation, suicide plan, and suicide attempt in our sample. The frequencies of other variables within the sample are presented in Table 2.

Of all the students, 26 (6.2%) reported lifetime psychiatry visits, 16 (3.8%) reported consuming psychiatry drugs for at least one month, and 80 (19.1%) reported lifetime psychology visits. Among the students who had lifetime suicidal ideation, these frequencies were 8 (11.9%), 7 (10.5%), and 18 (26.9%), respectively.

Of the students who had lifetime suicidal ideation, about 80% (58 subjects) answered the question regarding the main suicide way or tool they thought of. Of these students, 17 (23.9%) thought of overdosing on medicines, 4 (5.6%) thought of eating poison, 6 (8.5%) thought of hanging, 6 (8.5%) thought of

Table 1. The frequency of present and past hopelessness, death wish, suicidal ideation, suicide plan, and suicide attempt

<table>
<thead>
<tr>
<th></th>
<th>Now</th>
<th>Within last month</th>
<th>Within past 6 months</th>
<th>Within past 12 months</th>
<th>Lifetime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hopelessness</td>
<td>97 (23.0%)</td>
<td>Not asked</td>
<td>Not asked</td>
<td>Not asked</td>
<td>269 (63.9%)</td>
</tr>
<tr>
<td>Wish to die</td>
<td>55 (13.1%)</td>
<td>Not asked</td>
<td>Not asked</td>
<td>Not asked</td>
<td>172 (40.8%)</td>
</tr>
<tr>
<td>Suicidal ideation</td>
<td>15 (3.6%)</td>
<td>18 (4.2%)</td>
<td>24 (5.7%)</td>
<td>42 (10%)</td>
<td>71 (16.9%)</td>
</tr>
<tr>
<td>Suicide plan</td>
<td>10 (2.4%)</td>
<td>15 (3.5%)</td>
<td>21 (4.9%)</td>
<td>34 (8.1%)</td>
<td>50 (11.9%)</td>
</tr>
<tr>
<td>Suicide attempt</td>
<td>—</td>
<td>3 (0.5%)</td>
<td>10 (2.4%)</td>
<td>16 (3.8%)</td>
<td>33 (7.8%)</td>
</tr>
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</table>
throwing oneself from a height, 4 (5.6%) thought of cutting their wrists, 3 (4.2%) thought of self-burning, 2 (2.8%) thought of stabbing oneself, 1 (1.4%) thought of using guns, and 1 (1.4%) thought of eating chalk.

Of the students who reported suicide attempt in their lives, about 90% (30 subjects) answered the question regarding the main suicide way or tool they actually used. Of these, 11 (33.3%) used overdosing on medicines, 5 (15.2%) used eating poison, 8 (24.2%) used hanging, 2 (6.1%) cut their wrists, 2 (6.1%) used stabbing, 1 (3%) used self-burning, and 1 (3%) used eating chalk.

We then computed the odds of lifetime suicidal ideation in dichotomous groups of independent variables (Table 3). As is shown in Table 3, the odds of lifetime suicidal ideation was significantly higher among male students in the sample. It was also higher among students who reported regular substance use, other-sex romantic friendships, marital separation or divorce, less religious salience, and less Islamic praying.

We then ran a logistic regression analysis including all the aforementioned variables to predict lifetime suicidal ideation. The results are shown in Table 4. The logistic regression analysis showed that after controlling for substance usage, gender, and other independent variables, doing the Islamic daily prayers halved the odds of lifetime suicidal ideation, having other-sex romantic relationships doubled the odds of lifetime suicidal ideation, and marital separation increased the odds of lifetime suicidal ideation by a factor of 12.9. Effects
of gender and substance use on lifetime suicidal ideation became statistically nonsignificant.

Discussion

In a 1995 survey of a nationally representative sample of undergraduate college students in the United States (4609 respondents) about 10% of the students reported having serious suicidal ideation in the previous 12 months, 7% of students made a suicide plan, 2% attempted suicide at least one time, and 0.4% made a suicide attempt that required medical attention (Brener et al., 1999). Corresponding statistics from our sample reporting suicidal ideation (10.0%), suicidal plan (8.1%), and suicide attempt (3.8%) rates were surprisingly similar to the above study.

The lifetime prevalence of suicidal ideation (16.9%), plan (11.9%), and attempt (7.8%) in our study was somewhat greater than a similar study previously done on the general population in the Karaj City in central Iran (lifetime suicidal ideation: 14.1%, lifetime suicide plan: 6.7%, and lifetime suicide attempt: 4.2%; Bertolote et al., 2005). This may reflect the overall greater suicide rate in the western provinces of Iran, with yet unclear mechanisms.

Marital separation

Marital separation has previously been stated as one of the major suicide risk factors in western populations (Kõlves, Ide, & De Leo, 2010; Wyder, Ward, & De Leo, 2009). In our study, 3 of the 4 separated or divorced students reported suicidal ideation in their lives (OR=15.40; CI=1.58-150.24). This implies that marital separation can be an important suicide risk factor across diverse populations and different cultures.

Other-sex romantic relationships

In our study, risk of lifetime suicidal ideation was more than two times in the students who had lifetime romantic other-sex relationships. We found few previous studies on the association between romantic relationships and suicide among adolescents. These studies showed that adolescents with romantic relationships were significantly more depressed than the adolescents who did not have such relationships (Joyner & Udry, 2000), and more likely to have suicidal ideation (Delfabbro et al., 2013). We did not find any comparable study on university students, so our study is among the first few studies specifying this risk factor.

It should be noted that romantic relationships are multidimensional phe-
nominal and each aspect of them can differently affect mental health and sui-
cidality. For example, one can argue that not having a romantic relationship
may isolate individuals and impact their mental health, and loneliness may in-
crease their suicidal ideations. Further studies in this regard are recommended.

Religious Salience

High degrees of religious salience decreased the odds of suicide by approxi-
mately one-third in our study. This is similar to some previous studies. For
example, Wu and colleagues conducted a meta-analysis regarding religion and
suicide commission (Wu, Wang, & Jia, 2015). Their meta-analysis suggested an
overall protective effect of religiosity (pooled OR=0.38, 95% CI: 0.21–0.71). In
fact, religiosity has been shown to be a protective factor against suicide in vari-
ous settings among different religions (Islam, Christianity, Judaism), cultures,
and countries (Gearing & Lizardi, 2009).

The protective role of religiosity may involve mechanisms like strong pro-
hibitions against suicide, involvement in organized religious activities and ex-
tended support network, and lower levels of substance use among religious
people (Gearing & Lizardi, 2009).

Five Daily Islamic Prayers

According to Islamic beliefs, every adult Muslim must perform a ritualistic act
of worship five times a day at prescribed times, which is called “Salah” or “Salat”
in Arabic. It includes physical acts like standing, bowing, and prostration, in
addition to mental and spiritual acts like saying prayers, reading passages of
Holey Quran, and talking directly to God. Doing the five daily Islamic prayers,
similar to religious salience, decreased the odds of suicide by approximately
one-third in our study. It was interesting that doing the daily Islamic prayers
halved the odds of suicidal ideation even after controlling for the religious sa-
lience. We could not find records of similar studies being performed before, so
our study may be among the first ones pointing to Islamic prayers as a possible
protective factor against suicide.

Gender

Although the prevalence of death wish was equal among males and females,
the odds of lifetime suicidal ideation or previous suicide attempt was double
for males in our study. This is in contrast to most western countries in which
females report higher suicidal ideation and attempt than males (Canetto &
Sakinofsky, 1998). This was also in contrast with a previous study done in gen-
eral population of Karaj city in Iran in which the difference between males
and females regarding suicidal ideation, plan, and attempt was not significant (Malakouti et al., 2009). The mechanisms underlying this difference remain to be clarified. Issues such as higher levels of substance use among male students or fewer female students reporting premarital romantic relationships may play some role.

**Substance Use**

Substance use has already been shown to be an important risk factor for suicidal ideation and attempt, although there are relatively few studies in this regard. In a study by Kokkevi and colleagues among 45,086 16-year-old adolescents from 16 European countries, any lifetime substance use (including nicotine, excluding cannabis) increased the odds of self-reported suicide attempt by more than double (OR=2.41, CI=2.14-2.70; Kokkevi et al., 2012). This finding is similar to our study in which regular substance use tripled the odds of self-reported suicide attempt (OR=3.54, CI=1.62-7.76). Given the fact that about 16% of our sample reported regular substance use, and about 17% of European adolescents in above study reported lifetime substance use (excluding cannabis), this risk factor seems to deserve much more attention.

Most independent variables mentioned in this study seem to be related to each other. For example, most Iranian students depend primarily on their parents for their basic and economic needs. If students become involve romantically with each other and the parents do not consent, family quarrels ensue and may eventually lead to separation trauma, all of which can increase stress, hopelessness, and the probability of suicidal ideation. Even in western cultures, premarital romantic relationships can impose important issues. For example, partners may discover their partner's infidelity, or a partner may become dependent to the other while the other may want to break up. These problems can lead to chronic quarrels and/or separation, which then can result in Adjustment Disorder and probable suicidality.

Religion, too, can have multiple effects. First of all, suicide is regarded as a great and unforgivable sin by Abrahamic religions (Judaism, Christianity, and Islam). Second, Islamic culture recommends other-sex romantic, intimate, or sexual relationships only in the context of marriage. Third, using addictive substances is prohibited in most Islamic traditions. These and other factors (including social support from religious groups) may describe the negative relationship between religion and suicide.

Our study had important limitations. We studied a small sample among voluntary university students in a small city in the west of Iran, so the findings may not be generalizable to other university students in Iran or elsewhere. Second, the design of our study was cross-sectional and one should be cautious inferring causal relationships. For example, although it was shown that Islamic
praying was inversely associated with suicidal ideation, it does not necessarily mean that Islamic praying will lead to less suicidal ideation, even though it may actually be the case.

Future studies may explore further the significant findings of this study, including the nature and impact of the students’ romantic relationships and Islamic daily prayers on the students’ suicidal ideation and behavior. It should also be studied that why few of the suicidal students received psychological/psychiatric visits, and what the chronological and reciprocal relationship is between suicidal ideations/attempts and the new risk/protective factors identified.

It is premature to conclude any firm clinical recommendations from this study. Nevertheless, it may be wise for university mental health authorities to periodically use simple short questionnaires to screen university students for suicidal ideation, death wish, or hopelessness, and offer mental health care to the students in danger. It may also be prudent that mental health professionals exert more caution in their recommendations regarding dating and premarital relationships. While engagement and committed romantic relationships might offer some mental health benefits (Braithwaite, Delevi, & Fincham, 2010), unstable relationships and separation may be detrimental to the students’ mental health, and recommendations concerning such issues should be individualized. Another example would be when a religious suicidal student reports personal gratification and less suicidal ideation when doing Islamic prayers; in situations like this, students may be encouraged to continue seeking benefit from their prayers in addition to other professional mental health services.

Conclusion

Suicidal ideation, plan, and attempt may be more common among some Iranian university students than what was thought before, and can inflict major health issues. This study shows that few of the suicidal students receive professional psychiatric or psychological assistance, so periodical screening of the students for suicidal ideation and offering them professional assistance is recommended. Apart from well-known suicide risk or protective factors, there may still be other factors that have largely been overlooked. This study shows that daily prayers, romantic relationships, and marital separation may be among these factors and are worthy of more research and study.

References


