

Risk Factors for Suicidal Ideation: A Systematic Review

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Abstract - Suicide is a leading cause of mortality worldwide and is considered as a psychiatric emergency. Suicidal ideation is thinking about, considering or planning suicide and the ideation may vary regarding the specificity of suicide plans and the degree of suicide intent. A systematic review was conducted to collate and review all the research studies concerning risk factors for suicidal ideation. All the relevant papers were identified through search engines Google Scholar, PubMed, and Research Gate. As a result of systematic research review, eight articles were identified and that addresses risk factors for suicidal ideation in general population. The result indicated that suicidal ideation may be related with the presence of family history of psychiatric illness, depressive mood, high anger and short or long sleep duration. The studies found that depression, anxiety, hostility, inferiority, insomnia, divorce, unemployment, psychiatric morbidity, having no close friends, use of alcohol and addictive drugs were considered as a significant risk factor for suicidal ideation. Studies also explained that female gender, psychoactive substances, experience of violence, stressful life events, low standard of living, aggression, impulsivity, social recognition, low self-esteem, post-traumatic stress disorder, use of alcohol and drugs were associated with suicidal ideation. This review draws insight about major risk factors for suicidal ideation and suggested that future studies must focus on the suicide prevention strategies not only for psychiatric patients, but also for people in the general community.

Index Terms - Suicide, Suicidal ideation, Risk factors.

INTRODUCTION

According to Pokorny (1974) "suicidal ideation is thought about killing oneself and this ideation may vary in seriousness depending on the specificity of suicide plans and the degree of suicide intent". Studies revealed that "Suicide is a third leading cause of death among 15 to 24 years old (Anderson & Smith, 2005)

and second leading cause of death among college students (Schwartz, 2006)". Globally, lifetime prevalence rates are approximately 9.2% for suicidal ideation and 2.7% for suicide attempt (Nock et al, 2008).

There are two type of suicidal ideations such as active and passive suicidal ideation. "Active" suicidal ideation means experiencing current, specific, suicidal thoughts and it present when there is a conscious desire to inflict self-harming behaviours, and the individual has any level of desire. Active suicidal ideation was assessed using "Miller's Modified Suicidal Ideation Scale" (Miller et al, 1986) "Passive" suicidal ideation refers to a general wish to die but when there is no plan of inflicting lethal self-harm to kill oneself. Passive suicidal desire was assessed using "Scale for Suicidal Ideation" (Beck, Kovacs & Weissman, 1979).

Suicidal behaviour has been defined along a continuum from suicidal ideation to suicide attempts and then suicide completion (Barrios et al, 2000; Hovey & King, 2002; Scocco & De Leo, 2002). Risk factors could increase the likelihood of developing suicidal ideation. Researchers identified risk factors of suicidal ideation among women such as hopelessness, stressful life events, intimate partner violence, and alcohol abuse (Baca-Garcia et al, 2008; Stephenson et al, 2006; Lamis et al, 2010). Schriver et al (2020) found suicidal ideation was associated with younger age, race, marital status, hospital entity as well as diagnosis of mood, anxiety, alcohol, cannabis use, chronic pain, breathing, sleep, and stress disorders including PTSD. Therefore, mental health professionals might pay attention not only to subjective mood state (such as depressiveness and anger), also sleep duration and family history of psychiatric illness to evaluate risk factor in a community.

Most of the studies showed that suicide is “a result of a multifaceted range of social, psychiatric, biological factors, and one or more these variables may affect suicidal behaviors by complex mechanisms (Lewinsohn, Rohde & Seeley, 1994; Mann et al, 2001; Rowe et al, 2006)”. Previous research studies explained the suicidality and suicide risk factors in people with various mental disorders (Agargun et al, 2007; Schmidt et al, 2001). But the problem of suicide is no longer limited to psychiatric patients, it also for general population. For the sake of mental health of the community, it is essential to conduct a study of risk factors for suicidal ideation in general population. Because this will enable the researcher to plan suicide prevention strategies for people in the general community.

MATERIALS AND METHODS

Aim: To systematically review all the research studies concerning risk factors for suicidal ideation.

The systematic review was conducted based on PRISMA (Preferred reporting item for systematic review and meta-analysis) guidelines.

Information source and search strategy:

Risk factors for suicidal ideation were identified by searching the three search engines such as “Google Scholar”, “PubMed”, and “Research Gate”. Only the keyword “risk factors for suicidal ideation” has been used to search articles in the search engines.

Inclusion criteria:

Studies were selected based on the following inclusion criteria such as,

- Full-text article.
- The collection of researches includes all the studies published between 2000 and 2020.
- The articles concerning risk factors for suicidal ideation.
- Studies published in peer-reviewed journal.
- Studies published in English language were only included in this review.

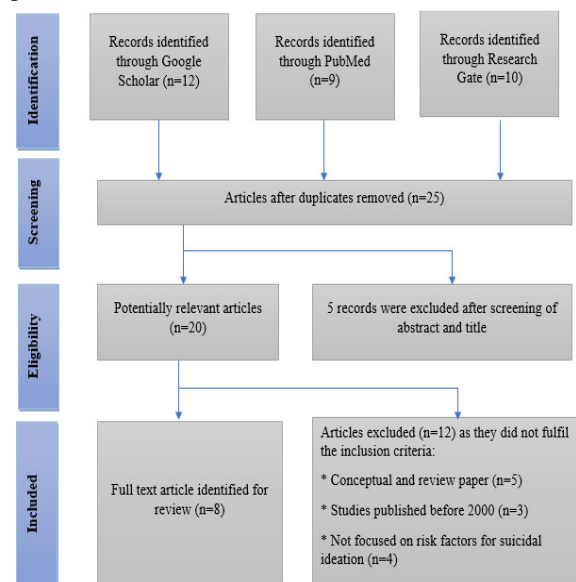
•Exclusion criteria:

- Studies which are not focus on risk factors for suicidal ideation.
- Conceptual and review papers were excluded.
- Dissertations, pilot / prototype studies, and studies published in a language other than English were excluded.

Study selection and data extraction:

A total of 31 studies regarding risk factors for suicidal ideation were found as a result of the initial article search. After removing the duplicates, 25 articles were reviewed. Identified studies were reviewed independently for eligibility based on the two-step process; first screening was based on the abstract and title, and then full texts assessed for the second screening. At both the stages, data were extracted based on the inclusion criteria. After selecting the potentially relevant articles, 12 studies were excluded as they did not fulfil the inclusion criteria. Finally, a total of 8 studies addressing risk factors for suicidal ideation were included for the systematic review.

Figure 1: Flow chart of the selection process for the present article.



RESULTS

Table 1 shows the studies related to risk factors of suicidal ideation.

Title	Author	Sample	Study Design	Tools Used	Findings
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Risk factors for the suicidal ideation of the general population	Bae et al (2013)	One thousand participants (500 males and 500 females); mean age of total sample 39.6 ± 11.6 yr ranging 20 to 59 years.	Survey method	* Center for Epidemiologic Study Depression Scale (CES-D) * Beck Scale for suicidal ideation (BSI) * Spielberger state-trait anger expression inventory (STAXI) * Barratt impulsiveness scale (BIS)	Suicidal ideation may be related with the presence of family history of psychiatric illness, depressive mood, high anger and short or long sleep duration.
Prevalence of suicidal ideation and associated risk factors in the general population	Lee et al (2010)	2054 participants, 1002 male (48.8%) and 1052 females (51.2%) aged ≥ 15 years.	A telephone interview survey	* Brief Symptom Rating Scale (BPRS-5) * Questions about personal experience with suicide.	The prevalence of SI was 2.84% in the past week, 5.50% in the past year and 18.49% during a lifetime. The presence of SI over the past year, SI during the lifetime, psychiatric morbidity, depression, anxiety, hostility, inferiority, insomnia, divorce, unemployment, history of seeking help for psychological distress and having suicidal behaviors in relatives or friends are the significant risk factors for SI in the last week.
Prevalence of suicidal ideation and related risk factors in the German general population.	Forkman et al (2012)	2509 sample with the mean age of 49.4 years.	Interview method	* Rasch based Depression Screening * The Hospital Anxiety and Depression Scale	The result of the study indicated that suicidal ideation was reported by 8% of participants and they were less likely to be married or living together with the partner and to have children aged 6 to 13 years and were more likely to be divorced. Participants with suicidal ideation have significantly higher levels of depressive and anxiety syndromes.
Prevalence and selected risk factors of suicidal ideation, suicidal tendencies, and suicidal attempts in young people aged 13 – 19 years.	Kapka-Skrzypczak (2019)	5685 samples (3980 girls and 1705 boys), aged 13 to 19.	Survey method	* Self-report Questionnaire	The result of the study indicated that suicidal behavior in adolescence is related with female gender, intake of psychoactive substances, running away from home, being raised in a single-parent family, addiction of family members to alcohol, and experiences of violence.
Genetic and other risk factors for suicidal ideation and the relationship with depression	Dutta et al (2017)	Active and passive suicidal ideation were assessed in a Sri Lankan population-based twin-registry (n=3906 twins) and a matched non-twin sample (n=2016)	Interview and Survey method	* Composite International diagnostic interview * Chalder Fatigue Questionnaire * Brief Life Event Questionnaire * The Childhood Experience of Care & Abuse Questionnaire	The lifetime prevalence of suicidal ideation was 13.0% for men and 21.8% for women, with no significant difference between twins and non-twins. Female gender, termination of marital relationship, low education level, urban residence, losing a parent whilst young, low standard of living and stressful life events in the preceding 12 months were the factors that predicted suicidal ideation. The result indicated that suicidal ideation was strongly correlated with depression, but also with abnormal fatigue and alcohol and tobacco use.
Risk factors for suicidal behavior among a national sample of adolescence: Implications for prevention.	Waldrop et al (2007)	A sample of 2002 male and 1904 female participants aged 12 to 17 years.	Structured telephonic interview	* Self-reported questions addressing family alcohol abuse, drug use, violence exposure, lifetime PTSD, lifetime depression, lifetime SUD, suicidal ideation attempts.	The result of the study indicated that sample prevalence of suicidal ideation and attempts were 24.3% and 3.3% respectively. Suicidal ideation was positively correlated with female gender, age, family alcohol and drug problems, violence exposure, lifetime depression and posttraumatic stress disorder (PTSD).

Risk factors for suicidal ideation and attempts in talented, at-risk girls.	Hull-Blanks, Kerr & Robinson Kurpius (2004)	A sample of 337 talented at-risk adolescent girls aged between 13 and 19. Participants were from part of a Larger National Science Foundation funded project entitled TARGETS (Talented At-Risk Girls: Education and Training for Sophomores)	Questionnaire method	* The Adolescent At-risk Behaviour Inventory * Rosenberg Self-Esteem Questionnaire * Personality Research Form, Version E.	Girls with histories of suicidal ideation and/or attempts had significantly higher levels of substance use, impulsivity, aggression, social recognition, and significantly lower levels of self-esteem and harm avoidance than girls without such histories.
The prevalence of suicidal ideation in adolescents and associated risk factors: An example from Turkey	Canbaz& Terzi (2018)	Sample of 2438 high school students aged 15 to 18 years.	Questionnaire method	* The Youth Risk Behavior Surveillance System Questionnaire (YRBSS)	The prevalence of suicidal ideation in adolescents in the last 12 months was 17.9%. The result revealed that being female, use of alcohol, and addictive drugs, being in physical fights, having no close friends, bullying and other psychosocial distress were significant risk factors in the development of suicidal ideation.

A total of twenty-five articles were screened through the search term used in the databases. Eight research papers met inclusion criteria for the current systematic review to explore the risk factors for suicidal ideation in general population.

Risk factors for suicidal ideation:

A study by Bae et al (2013) found depressive mood, high anger, abnormal sleep duration and a family history of psychiatric illness were associated to suicidal ideation in general population. Similarly, a research study indicated that 95% of people who commit suicide have a diagnosis of mental disorder and 80% of those with a mental disorder were diagnosed as suffering from depression (Sadock, 2007). Previous studies have demonstrated possible relationship between high level of anger and suicidality (Lee et al, 2009; Engin et al, 2009). Furthermore, studies confirmed that people who suffer from insomnia or sleep disturbances could be at greater risk of depression and committing suicide (Krakow et al, 2000; Ağargün, Kara & Solmaz, 1997). Lee et al (2010) conducted a nationwide community survey using a computer-aided telephone interview system. This study revealed that the weighted prevalence of suicidal ideation was 2.84% in the past week, 5.50% in the past year, and 18.49% during a lifetime and also “a significant risk factors for suicidal ideation in the last week included presence of suicidal ideation over the past year, suicidal ideation during the lifetime, psychiatric morbidity, depression, anxiety, inferiority, hostility, insomnia, divorce,

unemployment, history of seeking help for biological distress, and having suicidal behaviour in relatives or friends”. A study by Thompson et al (2005) found hopelessness was one of the strongest and most consistent predictors of suicidal ideation.

According to Forkmann et al (2012), highest socio-demographic suicidal ideation risk factors were “living alone, being divorced, and not having children aged younger than 3 years”. In addition, participants having suicidal ideation showed significantly higher levels in depression and anxiety.

Prevalence and selected risk factors of suicidal ideation, suicidal tendencies, and suicidal attempts in young people aged 13 – 19 years were assessed by Kapka-Skrzypczak (2019). This study found that “the prevalence of suicidal thoughts was 25%, suicidal plans - 16% and 4.4% of non-fatal suicidal attempts”. The study indicated that suicidal behavior in adolescence was related to “female gender, intake of psychoactive substances, running away from home, being raised in a single-parent family, addiction of family members to alcohol, and experiences of violence”. This study also found young people who reported suicidal ideation and had a history of attempted suicide were significantly more likely to report alcohol abuse by parents and experiences of psychological and physical violence from family members. Similarly, a study found that people with a history of attempted suicide were significantly more likely to have experienced emotional, physical and sexual abuse (Zoroglu et al, 2003).

Dutta et al (2017) found suicidal ideation was strongly correlated with depression, also with abnormal fatigue, alcohol and tobacco use. Similarly, a study by Fergusson et al (2000) found that depression was the strongest correlates of both suicidal ideation and attempt. Another study reported that many suicide attempters and completers are positive for alcohol and illicit drugs at the time of their suicidal gestures (Hufford, 2001).

Waldrop et al (2007) found suicidal ideation was correlated with “female gender, age, family alcohol and drug abuse, violence exposure, lifetime depression, and post-traumatic stress disorder and also suicide attempts were associated with female gender, age, sexual and physical assault, lifetime substance abuse or dependence, PTSD, and depression”.

Hull-Blanks, Kerr & Robinson Kurpius (2004) assessed the risk factors for suicidal ideation and attempts in talented, at-risk girls using 337 talented at-risk adolescent girls aged between 13 and 19. The result revealed that girls with histories of suicidal ideation and/or attempts had significantly higher levels of substance use, impulsivity, aggression, social recognition, and significantly lower levels of self-esteem and harm avoidance. This study also indicated that girls without suicide histories were also more likely to come from single mother families.

Canbaz & Terzi (2018) found being female, use of alcohol, and addictive drugs, being in physical fights, having no close friends, bullying and other psychosocial distress were significant risk factors in the development of suicidal ideation among adolescents. According to Swahn et al (2008) suicide attempts by adolescents were associated with early initiation of alcohol use. Similar results found that early initiation of drinking and smoking increased the risk of suicidal ideation and suicide attempts in both boys and girls (Kim & Kim, 2010).

DISCUSSION

The purpose of the present review was to addressing the risk factors for suicidal ideation among general population. A total of eight articles were reviewed and the result of the evaluation identified that there are numerous risk factors associated with suicidal ideation such as “depression, anxiety, hostility, inferiority, insomnia, use of psychoactive substances, experience

of violence, stressful life events, post-traumatic stress disorder (PTSD), and aggression”.

A research study by Park & Choi (2013) addressing the prevalence of suicidal ideation and risk factors among Korean adults. The result showed that “one year prevalence of suicidal ideation was 14.8% and higher suicidal ideation was found for women, elders, adults who were divorced or separated, who were in the lower socio-economic status, were alcohol dependent, had a short sleep time, and had higher perceived stress and depression”. The study also found depression, perceived stress, being women, being an elder, low education and not married were highly related with suicidal ideation in Korean adults. Toros et al (2004) investigated suicide attempts and risk factors among 4143 Turkish youth ages 10 to 20 years and found that people having problem with parents, using illicit drugs, and presence of psychiatric problems in relatives are the best predictors of suicide attempts in Turkish youth and children.

Nock et al (2009) found the disorders that most strongly predict a subsequent suicidal attempt are bipolar disorder, major depression, post traumatic stress disorder, conduct disorder, and drug abuse or dependence. The relationship between these disorders and suicide attempts are mostly due to the disorders predicting the development of suicidal ideation. A study by Brown & Vinokur (2003) found that participants with poor health or high level of depressive symptoms and increase in critical messages and social support predicted increased suicidal ideation. Previous study demonstrated a strong association between depression, physical illness and suicide (Jin & Zhang, 1998). Those who are depressed or physically ill are more likely to have suicidal thoughts and wishes, and more likely to attempt suicide. Similar study found that the critical negative messages was associated with increased suicidal behaviour (Woznica & Shapiro, 1990).

Strengths:

- A first systematic research review addressing risk factors for suicidal ideation.
- PRISMA guidelines were used to minimize error.

Limitation:

- The current systematic review does not contain specific information about the respective number

of studies excluded due to not meeting the required inclusion criteria.

CONCLUSION

Suicidal ideation often called suicidal thoughts or ideas, is a broad term used to describe a range of contemplations, wishes, and preoccupation with death and suicide. Suicide ideation and attempts are strongly predictive of suicide deaths, and can result in negative consequences such as injury, hospitalization, and loss of liberty, etc. The major purpose of the current study is to review all the researches concerning risk factors for suicidal ideation. From the review, it found that depression, anxiety, hostility, inferiority, insomnia, use of psychoactive substances, experience of violence, stressful life events, post-traumatic stress disorder (PTSD), and aggression were considered as a major risk factor for suicidal ideation. Suicide and suicidal behaviour comprise the nineteenth leading cause of global disease burden (such as years lost to disability, ill-health and early death). So, there is urgency to better understand and prevent suicidal ideation and behaviour. Future studies must focus on the suicide prevention strategies not only for psychiatric patients, but also for people in the general community, who do not visit mental health services.

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