

Suicidal Ideation in India: An Understanding of The Current Literature

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ABSTRACT

India accounts for a large percentage of the global suicide burden; and Suicidal Ideation (SI) remains the most prevalent suicidality in the country. Given that SI precedes any suicidal plan, intent or attempt, there is a need for a greater understanding of SI to develop effective prevention strategies and policies. The aim of this paper is to examine the patterns and prevalence of SI in India, and present an overview of the research findings till date. An academic database 'PubMed' was comprehensively searched and 68 relevant studies were obtained. They were further categorized into 4 groups: population-based prevalence studies; SI in specific groups; psychological correlates of SI; and suicide prevention/intervention studies. Prevalence studies showed high prevalence of SI among adolescents (18-25 years old), females and those residing in urban areas. High prevalence of SI was noted in certain specific groups compared to the general population. Correlates of several psychosocial factors with SI are discussed in the paper. Despite limited number of intervention-based studies from India, efficacy of specific interventions, rehab services, and helplines are explored. Limitations in various studies are identified and a direction for future research is suggested. This paper strengthens our understanding of SI in India and marks the relevance of different SI patterns in the country. It highlights the need for a systematic suicide prevention strategy, which combines multiple sectors at a national level.

Keywords: *Suicide, India, Suicidal ideation, Review, Prevalence, Correlates*

Globally, for every 40 seconds, a life is lost to suicide. This accounts to 800,000 suicide deaths every year worldwide resulting in the second leading cause of death among 15–29-year-old. It is also noted that for every person who commits suicide, there may be 20 others attempting suicide. Although, suicide is a global phenomenon, 77% of suicides is reported to occur in low- and middle-income countries (LMIC)(website: <https://www.who.int/teams/mental-health-and-substance-use/suicide-dataassessed> as on 22.7.2021). Particularly, India constituting 18% of the population accounts for 26.6% of global suicide deaths(Amudhan et al., 2020). India's contribution to global suicide deaths increased from 25.3% in 1990 to 36.6% in 2016 among women, and from 18.7% to 24.3% among

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men (Amudhan et al., 2020). However, National Crime Records Bureau (NCRB) reports relatively low rate of suicide in the country (website: <https://ncrb.gov.in/en/accidental-deaths-suicides-in-india> accessed on 3.8.2021). This disparity in reports can be attributed to known underreporting of incidences.

The National Mental Health Survey (NMHS) of India conducted in 2016 reported 5.1% of participants to have experienced suicidality in any form (Suicidal Ideation/Suicidal attempt/suicide crisis) in the past one month, with suicidality prevalence to be higher in women than in men (Amudhan et al., 2020). NMHS also noted the most prevalent suicidality phenomenon in India to be Suicidal Ideation (SI), with 3.5% of the participants to report SI. Variations in the prevalence of SI across different states, age groups, gender, income groups and area of residence is noted in the national survey results.

Suicidal ideation refers to thinking about, considering, or planning suicide (Klonsky et al., 2016). It can be defined as having plans and wishes to die by suicide but have not made any recent overt suicide attempt. These suicidal ideations may range in intensity from fleeting thoughts to concrete plans for killing oneself or a complete preoccupation about self-destruction. Among various risk factors for suicide, SI is said to be the most significant predictor of it. SI logically precedes a suicidal plan, intent, preparatory behavior, and attempt. Hence, in a LMIC like India with its heterogeneity across states in prevalence of SI, diverse social correlates to SI across different groups (Dandona et al., 2018), associated stigma and poor resource availability reflects on the need for effective prevention strategies and policies in the country.

The present review provides an overview and comprehensive understanding of the current literature on the prevalence and correlates of SI in India. Considering the large population of the country, efforts to address suicidal ideation in India is imperative to make a global difference in the burden of suicides. This is in line with WHO which recommends identifying SI as a key component of all comprehensive suicide prevention strategies (Amudhan et al., 2020).

Aim

The aim of this paper is to provide a brief review of the current findings related to Suicidal Ideation (SI) in India.

METHODS

To identify the relevant studies on SI in India for this review, an academic database 'PubMed' was comprehensively searched with terms 'suicide', 'suicidal ideation', and 'India' using Boolean operators (AND/OR) in either title or abstract. The preliminary search analysis resulted in 221 relevant articles as on 26.03.2022. Abstracts, findings and methodology of these studies were reviewed and finally 68 studies were found to be relevant for the present review.

All the studies considered to be relevant were selected by a single reviewer based on the following criteria.

Inclusion criteria:

All studies, in which the

- a) Study worked on suicidal ideation (either independently or in-combination with other parameters)

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- b) Population studied was Indian.
- c) Paper was published in English.

Exclusion criteria:

Studies focusing on

- a) Pharmacological management of suicidal ideation.
- b) Suicidal ideation and its correlates with biological variables.
- c) Suicide mortality, suicide attempt/intent, self-harm (but not specifically on SI)
- d) SI outside the context of demographics of India
- e) Understanding the attitude of health workers on SI were excluded from the study.

Review themes or categories

Among the selected 68 articles, studies varied in research design, statistical methodology, instrumentation and intervention. Although Studies centered across different regions of the country, majority of the studies were from southern India. The studies ranged from 1998 to 2022.

The selected 68 studies have been categorized into following groups:

- a) Population based prevalence studies
- b) SI in specific groups
- c) Psychological correlates of SI
- d) Suicide prevention/intervention studies.

This categorization is solely for the ease of understanding and the studies are not exclusive with respect to these categories.

RESULTS

1. Prevalence in general population:

Till date 19 studies (from 2006 to 2022) have reported the prevalence of SI in general population in different regions of the country. All of these studies have a cross sectional design including three comparative studies (Jordans et al., 2018; Khan et al., 2016; Singh et al., 2020). Thirteen studies have used different standardized scales to measure SI, while the rest have adapted structured and semi-structured interview schedules. SI is assessed across different intervals ranging from past 2 weeks to lifetime prevalence.

Age, gender, and place of residence:

In India, the prevalence of SI among individuals in the age group of 12-25 years is reported to be in the range of 3.9% to 35.8% (Bhat U. et al., 2018; Bhola et al., 2014; Desai et al., 2021; Francis & Bance, 2017; Kumar et al., 2021; Malhotra et al., 2019; Mukhopadhyay et al., 2012; Y. Nath et al., 2012; Pavani et al., 2021; Pillai et al., 2009; Sidhartha & Jena, 2006; S. Singh et al., 2012; Thakur et al., 2015). However, prevalence among those above 18 years of age was found to be 3.5% (Kallakuri et al., 2018), and above 30 years of age to be 5.2% (Jonas et al., 2014). A study that focused on geriatric population noted 62.5% of them to have SI (Shoib et al., 2020). A national mental health survey conducted on adults above 18 years of age across 6 zones in the country reports overall suicidality (includes suicidal ideation, suicide crisis and suicidal attempt) prevalence to be highest among those aged between 40-49 years (Amudhan et al., 2020). However, no study was found to address the prevalence of SI among individuals below 12 years.

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Several studies in the review have reported variation in the SI score and prevalence among males and females (Bhola et al., 2014; Chaudhury et al., 2013; Desai et al., 2021; Jordans et al., 2018; Khan et al., 2016; Kumar et al., 2021; Pillai et al., 2009; Sidhartha & Jena, 2006; Thakur et al., 2015). Studies have commonly noted being a female to be the risk factor for SI (Bhola et al., 2014; Chaudhury et al., 2013; Desai et al., 2021; Jordans et al., 2018; Kumar et al., 2021; Y. Nath et al., 2012; Pillai et al., 2009; Sidhartha & Jena, 2006). Although female students are reported to be more likely to express suicidal ideation than male students (Bhola et al., 2014), females are noted to be 6 times more likely to have SI than males (Pillai et al., 2009). The same study also observed being a female and a rural resident heighten the risk for SI, indicating rural women to be specifically at higher risk (Pillai et al., 2009). Two studies support this, stating place of residence i.e., living in rural or urban areas has an association with SI (Khan et al., 2016; Singh et al., 2020). Additionally, a study that focused exclusively on SI in women of reproductive age in rural regions of Andhra Pradesh found 1 in 10 rural women to have SI (Soni et al., 2017). Conversely, two studies report suicidal ideation to be higher among males than females (Khan et al., 2016; Viswanathan et al., 2019). While, a study that was conducted on urban students, no difference in the prevalence of SI was found among genders (Nath et al., 2012).

However, when studies focused on the prevalence of SI in urban and rural areas (without gender correlates), contrasting finding was observed. If prevalence of SI among urban areas was reported to range from 9% to 30.9%, prevalence of SI in rural areas was found to be 3.5% to 11.7%. To be specific, studies that noted SI in metropolitan cities such as Bangalore, Delhi etc reported higher prevalence (Bhola et al., 2014; Sidhartha & Jena, 2006; Singh et al., 2012). These results are supported by another south India based study that compared the prevalence of SI among urban and rural population which found SI to be higher among those residing in urban (20%) than in rural (12.5%) areas. However, a study conducted in three schools of Ranchi that compared the SI among tribal and non-tribal students found no significant inter-group difference (Chaudhury et al., 2013).

Considering the different zones of the country, southern region was found to have SI in the range of 3.5% to 35.8% (Bhat U. et al., 2018; Bhola et al., 2014; Kallakuri et al., 2018; Pavani et al., 2021; A. Singh et al., 2020; S. Singh et al., 2012), north India to have prevalence rate of 4.3% to 30.9% (Jonas et al., 2014; Khan et al., 2016; Malhotra et al., 2019; Sidhartha & Jena, 2006; Thakur et al., 2015), SI in west of the country ranges between 9% to 33.2% (Chaudhury et al., 2013; Desai et al., 2021; Mukhopadhyay et al., 2012) and east to have SI prevalence of 2.1% to 11.7% (Kumar et al., 2021; Y. Nath et al., 2012; Pillai et al., 2009; Soni et al., 2017). The details of these studies are shown in Table 1.

Table 1. The prevalence of SI among general population from different regions across India.

Sl No	Ref	Sample	Region	Year	Type of study	Scale	Results (prevalence of SI)	SI interval
1	(Sidhartha & Jena, 2006)	Adolescents (12 to 19 years) from 2 schools	Delhi	2006	Cross sectional survey	Semi structured questionnaire	21.7% (lifetime) and 11.7% (last one year)	Lifetime and past one year
2	(Pillai et al., 2009)	3662 youths (16-24 years)	Rural and urban communities in Goa	2009	Cross sectional	Structured interview	3.9%	Past 3 months
3	(Singh et al., 2012)	436 undergraduates	Bangalore, India	2011	Cross sectional	Scale for SI	15%	Current SI

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		ate students (18-25 years)			survey			
4	(Nath et al., 2012)	1,817 undergradu ate students (18-24 years)	Ahmedaba d, Gujarat	201 2	survey	Survey questionnaire With 2 items on SI	11.7%	Lifetim e ideatio n
5	(Mukhopadh yay et al., 2012)	2068 school- going adolescents	Sub districts of West Bengal	201 2	Cross sectional survey	Self administered validated questionnaire in local vernacular	11.7%	Last 12 months
6	(Chaudhury et al., 2013)	259 school going adolescents from X to XII standards	Private as well as Governme nt Schools of Ranchi, Jharkhand , India.	201 3	school- based cross- sectional analytical study	Suicidal ideation questionnaire	33.2%	Curren t SI
7	(Jonas et al., 2014)	n=4711 (above 30 years)	8 villages in Maharash tra (central India)	201 4	Populatio n based study (cross sectional)	6 standardized questions	5.1%	In last 6 months
8	(Bhola et al., 2014)	1087 adolescents (16-18 years)	Bangalore , India	201 4	Cross sectional survey	Columbia teen screen	25.4%	Past 3 months
9	(Thakur et al., 2015)	720 Adolescent school children (14 to 19 years)	Shimla, HP	201 5	Cross sectional survey	Pre-validated self administered questionnaire	30.9%	In past 12 months
10	(Khan et al., 2016)	150 Malaysian and 150 Indian students(18 -25 years)	Delhi(Indi an sample)	201 5	Comparati ve study	Suicide Behavior Questionnaire -Revised (SBQ-R)	Indian students reported higher suicidal ideation than Malaysian students	Not specifi ed
11	(Soni et al., 2017)	700 reproductiv e-age women	Rural regions of the Anand District in Gujarat, India	201 6	Explorator y study	World Health Organization self-reported questionnaire (SRQ-20).	11.5%	In last month
12	(Bhat et al., 2018)	4839 college students of various educational streams with mean age of 19.	Mangalore , Karnataka	201 8	Cross sectional survey	Self reporting questionnaire (SRQ-20)	13.6%	Past one month
13	(Kallakuri et al., 2018)	Adults above 18 years in population of 40000	12 villages in Andhra Pradesh	201 8	Cross sectional	One item in PHQ	3.5%	Curren t ideatio n

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14	(Shoib et al., 2020)	200 people above 60 years of age	Kashmir	2019	Cross sectional study	Beck suicide ideation scale	62.5%	Current Ideation
15	(Malhotra et al., 2019)	836 men of age 18-24 years	Rural areas of Faridabad, Haryana	2019	Cross sectional	Semi structured interview schedule	4.3%	Past 12 months
16	(Singh et al., 2020)	18 years and above	Puducherry	2020	Cross sectional	Columbia suicide severity scale	12.5% (12 months) and 20% (lifetime)	Lifetime and past 12 months
17	(Desai et al., 2021)	506 medical students	Western India	2021	Cross sectional (web based survey)	Web based survey with items on suicide cognitions and risk factors	9%	In past 2 weeks
18	(Pavani et al., 2021)	388 dental students	Southern India	2021	Cross sectional study	PHQ-9 and Suicidal Behaviours Questionnaire –Revised	35.8% (current) and 32.9% (in last year)	Current and past one year
19	(Kumar et al., 2021)	4667 and 8465 adolescent boys and girls aged 13-19 years	Uttar Pradesh and Bihar	2021	Cross sectional survey (secondary data analysis)	Secondary data analysis performed on cross sectional data obtained from understanding the lives of adolescents and young adults (UDAYA).	4.2% among girls. 2.1% among boys.	Past one year

2. SI in specific communities

Several studies in the literature have focused on the prevalence of suicidal ideation in specific communities to understand the pervasiveness of SI in those discrete groups. These specific groups include farmers, gender minorities, acid attack victims etc. In the present section, 6 studies that have focused on specific communities are addressed excluding those which focused on SI among individuals having different health conditions (physical/psychiatric patients - which are reviewed separately). Three of them are cross sectional studies (Beattie et al., 2019; Halli et al., 2021; Viswanathan et al., 2019) and one is a comparative study (Behere et al., 2021). Three studies (Behere et al., 2021; Sivasubramanian et al., 2011; Viswanathan et al., 2019) out of five have used standardized scales for the assessment of SI and the rest have used structured interview schedule to elicit information about SI. Also, three studies are from south India (Beattie et al., 2019; Halli et al., 2021; Viswanathan et al., 2019) and the rest are from UP and Maharashtra. Three studies were conducted on a community sample (Beattie et al., 2019; Behere et al., 2021; Viswanathan et al., 2019), rest of the three studies were conducted in a hospital/clinic/rehabilitation centre/trusts dedicated to the specific groups.

Large variation in the prevalence of SI can be observed across different groups. Among the two studies that have focused on rural community, one reports a prevalence of SI to be 60% among farmers (Viswanathan et al., 2019) and the other specifically reports high prevalence of SI among farmers exposed to pesticides compared to villagers who are not exposed

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(Behere et al., 2021). Additionally, this study also finds a significant correlation between pesticide exposure and SI.

Further, prevalence of SI among other specific groups are as follows. 62% in gender minorities (Halli et al., 2021), 2.1% in girls from lower caste (Beattie et al., 2019), 45% in men who have sex with men (Sivasubramanian et al., 2011) and nearly all of the acid attack victims have shown maladaptive psychological makeup such as SI (Mittal et al., 2020). The details of these studies are shown in Table 2.

Table 2. Studies across India focusing on SI in specific communities.

S I N o	Ref	Sampl e	Region	Year	Specif ic group	Type of study	Scale	Results	SI interv al
1	(Viswanathan et al., 2019)	191 farmers residing in a drought-affected area.	Tiruchinapali, Tamil Nadu	2019	Farmers	Cross sectional analytical study	Patient health questionnaire (PHQ)	60% of the farmers had suicidal ideation.	In past two weeks
2	(Beattie et al., 2019)	1191 girls from lower caste (of age 13-14 years)	North Karnataka	2013	Girls from lower caste	Cross sectional study	Self completed questionnaire	2.1% of them to be thinking they would be better off dead or of hurting themselves in some way.	Past 2 weeks
3	(Halli et al., 2021)	282 gender minority individuals	Bangalore	2012 (published in 2021)	Gender minorities	Cross sectional study	Structured questionnaire	63% report of SI	Past one month
4	(Mittal et al., 2020)	30 female victims of acid attack between the age group of 18 to 25 years	Uttar Pradesh	2020	Acid attack victim	Intervention study	Narrative interviews	All of the acid attack victims reported maladaptive psychological makeup such as SI.	Current ideations
5	(Sivasubramanian et al., 2011)	150 men who have sex with men	Mumbai	2011	Men who have sex with men	Mental health interview	Mini International Neuropsychiatric Interview	45% report of suicidal ideation, with 66% low risk, 19% moderate	Current SI

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								risk, and 15% high risk for suicide.	
6	(Behere et al., 2021)	200 rural agricultural community	Wardha district, Maharashtra, Central India	2021	100-farmers of age group 40-49, exposed to pesticides and 100 villagers of age 30 years and below not exposed to pesticides.	Cross sectional comparative study	Self reporting questionnaire-20 (Indian version)	Prevalence of SI is 31% among farmers exposed to pesticides and 8% among villagers not exposed to pesticides.	Past one month

3. SI in patients with health conditions

The present review has distinguished studies centered on understanding the pattern of SI among patients with different health conditions.

3.1 SI in patients with physical health conditions:

Various studies have observed the patterns of SI among individuals having different physical health conditions such as cancer patients in palliative care centers, HIV infected individuals, pregnant women, patients of tuberculosis, patients of epilepsy, COVID-19 infected patients and patients of Diabetes Mellitus. Among these, three studies are reported from Karnataka, two from West Bengal and one each from New Delhi and Chennai. Prevalence of SI is reported to be 14% among HIV infected heterosexuals(Chandra et al., 1998), 9.2% in terminally ill inpatients(Latha & Bhat, 2005), 5.4% among patients of epilepsy (Katyal et al., 2021), 5% among COVID-19 infected patients (Chakrabarti, 2021), 7.6% among pregnant women (Supraja et al., 2016)and 14.8% among Diabetic Mellitus patients(Majumdar et al., 2021).

Table 3 presents the details of the studies.

Table 3. Studies which evaluated SI in patients with different physical health conditions

S	Ref	Sample	Region	Year	Specific group	Type of study	Scale	Results	SI interval
1	(Chandra et al., 1998)	51 HIV infected men and women	HIV clinic at NIMH ANS, Bangalore	1998	HIV infected heterosexuals	Cross sectional study	Structured questionnaire	14% of them reported SI	Within 4-6 weeks of HIV revelation
2	(Latha & Bhat, 2005)	54 terminal	Kasturba	2005	Cancer patients	Cross sectional	Scale for suicidal	9.2% had severe SI.	Current

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	2005)	ly ill inpatient s from palliative care unit.	hospital , Manipal , Karnataka			study	ideation		ideation
3	(Supraja et al., 2016)	462 pregnant women attending an urban public hospital antenatal center	South Bangalore, Karnataka	2014-2015	Pregnant women	Cross sectional study	Modified version of the Suicide Behaviors Questionnaire-Revised (SBQR)	7.6% had SI and 2.4% of them had suicidal plans.	In current pregnancy
4	(Basutkar et al., 2021)	120 women (60 pregnant and 60 non pregnant) in Govt. Medical College & Hospital , Ooty	Ooty, Tamil Nadu	2021	Pregnant women	Observational study	Edinburg Postnatal Depression Scale	33.3% of pregnant women had SI. SI was found to be a significant predictor of depression.	Current ideation
5	(Majumdar et al., 2021)	1371 type 2 Diabetic Mellitus patients from 9 different hospitals and medical polyclinics.	Kolkata , West Bengal	2021	Type 2 Diabetic mellitus patients	Cross sectional survey	Patient Health Questionnaire-9	Suicidal ideation was detected in 14.8% of patients. Patients who had repeated attacks of hypoglycemia experienced suicidal ideation(22%) than who had no hypoglycemia (12%). Suicidal ideation did not correlate with body mass index, fasting plasma glucose or insulin usage.	Current ideation
6	(Kundu et al., 2021)	8 patients of multi drug resistance tuberculosis who needed psychiatric intervention	Kolkata , West Bengal.	2021 (study was carried out in 2016-201	Tuberculosis patients who needed psychiatric interventions	Intervention based study	In-depth interview technique	2 out of 8 patients reported Suicidal ideation. Psycho-education and supportive counseling was provided to them, after which	Current ideation

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		tions from RG Kar medical college, Kolkata.		7)				improvement was reported.	
7	(Chakrabarti, 2021)	635 COVID-19 infected in-patients in the age group of 20-55 years	Chennai	2021	COVID-19 infected patients	Cross sectional study	Single direct binary response question	5% of COVID-19 infected patients reported SI	Current ideation
8	(Katyals et al., 2021)	449 follow up patients of epilepsy above the age of 18 years at AIIMS, New Delhi	New Delhi	2021	Follow up patients of epilepsy	Longitudinal study	Mini International Neuropsychiatric Interview (MINI: version 6.0.0)	5.4% reported SI	Current ideation

3.2 SI in psychiatric patients

Among the 68 studies selected for the review, 19 studies have focused exclusively on understanding the prevalence and correlates of suicidal ideation among patients diagnosed with psychiatric disorders (current/retrospective). The psychiatric disorders of interest were Depression, Obsessive Compulsive Disorder (OCD), postpartum psychosis, Acute transient psychiatric disorder(ATPD), schizophrenia and drug use. Most of the studies were conducted in a hospital setting: two were retrospective reviews of clinical records, two were the results of international collaborative studies that included Indian sample, and samples of 4 studies were obtained from the respective community.

Majority of the studies were reported from North India, with all 3 studies focusing on drug users reported only from Delhi. Six out of 19 studies have focused on SI among patients diagnosed with Major depressive disorder (MDD)/ Bipolar Affective Disorder (BPAD), five articles were on patients diagnosed with OCD, two studies on schizophrenia patients and one study each on Attention Deficit Hyperactive Disorder (ADHD), Post partum psychosis, ATPD patients and 3 publications on drug users.

3.2.1 SI in-patients with depression:

Depression is observed to be one of the most consistent risk factors for SI. The findings suggest greater the severity of depression, higher the likelihood an individual will have SI(Chaudhury et al., 2013; Halli et al., 2021; Jordans et al., 2018; Latha & Bhat, 2005; Shoib et al., 2020; Sivasubramanian et al., 2011; Supraja et al., 2016). Specifically, studies that focused on patients diagnosed with depression found 83%, and 31/52 of them to have SI(Babu et al., 2008).

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A retrospective review of clinical records of patients less than 16 years of age (children) diagnosed with mood disorder, noted 13.2% of them to have had SI (Sagar et al., 2012). Risk factors or predictors of SI among children diagnosed with depression were not reported.

Recently, when two groups of patients with depression (those with recent suicide attempt and those without suicide attempt but having only SI) and healthy controls were compared, both the patient groups did not differ in terms of religiosity and spirituality. However, both the depression patient groups had lower scores of religiosity than healthy controls. The two patient groups also had a lower score on the “sense of hope”, when compared to healthy controls (Dua et al., 2021).

Studies have indicated several factors to influence the severity and frequency of SI among patients with depression. Table 4 presents the list of factors noted which includes clinical features such as duration of illness and subclinical symptoms of the illness and social factors such as demographics and family history of illness.

Table 4 Details of the association of various clinical and social factors with Suicidal ideation in patients with depression.

Association of SI in patients with depression				
Clinical features	Significant association with SI is noted	Severity of Depression (Lalthankimi et al., 2021; Umamaheswari et al., 2014)	Duration of current episode (Umamaheswari et al., 2014)	Duration of illness (Maheswari et al., 2012)
		Subsyndromal manic symptoms (Umamaheswari et al., 2014) (risk factor)	Hopelessness (Umamaheswari et al., 2014)	Suspiciousness (Maheswari et al., 2012)
		Hostility (Umamaheswari et al., 2014)	Irritability (Umamaheswari et al., 2014)	Symptoms of insomnia (Owusu et al., 2020)
	A non-significant association observed	Age of onset of illness (Umamaheswari et al., 2014)	Substance abuse (Umamaheswari et al., 2014)	Impulsivity (Umamaheswari et al., 2014)
Social factors	Significant association with SI is noted	Female gender (Lalthankimi et al., 2021)	Being married (Lalthankimi et al., 2021)	Nuclear family (Lalthankimi et al., 2021)
		Previous life events (Umamaheswari et al., 2014)	Family history of psychiatric disorders (Umamaheswari et al., 2014)	History of previous suicide attempt (Lalthankimi et al., 2021; Umamaheswari et al., 2014)

3.2.2 SI in OCD patients:

In the present review, five studies were found to have focused on understanding the prevalence and correlates of SI among OCD patients. Three studies conducted in Northern states of India report the prevalence of SI among OCD patients to range from 46.1% to 55.7% (Chaudhary et al., 2016; Gupta et al., 2014; Trivedi et al., 2013), while a south Indian study reports a prevalence of 28% among OCD patients (Kamath & Reddy, 2007). However, a large scale study conducted across 7 different countries (including India) reports only 6.4% of OCD patients to have SI.

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All these studies commonly report of a significant correlation between depression and SI among OCD patients (Chaudhary et al., 2016; Gupta et al., 2014; Kamath & Reddy, 2007). It was also found that in cases of severe depression associated with OCD, all the patients had suicidal ideation (Chaudhary et al., 2016). Hopelessness (Gupta et al., 2014; Kamath & Reddy, 2007) and anxiety (Gupta et al., 2014) were found to be other clinical correlates to SI among OCD patients. Another study that compared the clinical and sub clinical patients of OCD based on the severity of the illness, observed SI to be higher among ‘clinical’ patients. This argument was further strengthened with the findings of significant positive correlation found between disease severity and degree of suicidal ideation (Trivedi et al., 2013). Added to this, type of obsession and compulsion were also found to be associated with SI. SI was noted to be more among OCD patients having symptoms of contamination obsessions, cleaning and washing obsessions (Chaudhary et al., 2016; Gupta et al., 2014) followed by religious obsessions, sexual obsessions, repeated rituals and other obsessions like need to touch, and ask respectively (Chaudhary et al., 2016). Although 70% of the female participants are reported to have had SI (Chaudhary et al., 2016; Gupta et al., 2014), a study reports of no significant difference in the male and female, rural and urban or married and unmarried OCD patients in their SI scores (Trivedi et al., 2013).

Table 5 presents the clinical features and social factors associated with SI among patients diagnosed with OCD.

Table 5. Details of the clinical features and social factors associated with SI among patients diagnosed with OCD

Association of SI in patients with OCD			
Clinical features	Significant association with SI is noted	Symptoms of Depression (Chaudhary et al., 2016; Gupta et al., 2014; Kamath & Reddy, 2007)	Severity of depression (Chaudhary et al., 2016)
		Anxiety (Gupta et al., 2014)	Severity of OCD (Trivedi et al., 2013)
		Hopelessness (Gupta et al., 2014; Kamath & Reddy, 2007)	Cleaning and washing type of obsession (Chaudhary et al., 2016; Gupta et al., 2014)
Social factors	Significant association with SI is noted	Urban/rural (Trivedi et al., 2013)	Marital status (Trivedi et al., 2013)
		Female gender (Significant (Chaudhary et al., 2016; Gupta et al., 2014) & Non significant (Trivedi et al., 2013))	

3.2.3 SI among patients with psychotic symptoms and others

Among the studies that have focused on understanding SI in patients with psychotic symptoms, two have reported the patterns of SI during the psychotic episodes; with a SI prevalence of 38% in postpartum psychosis, and prevalence of 55.17% in patients of acute and transient psychotic disorders in between their episodes (Babu et al., 2008; Rajkumar, 2018).

A study which assessed patients having clinical symptoms of schizophrenia on their 7th day of admission to a tertiary mental hospital, reported 29.3% of them to have current SI (Nath et al., 2021). Whereas, another study on a long-term clinically improved schizophrenia patients, reported all the patients to have significant suicidality (experience of suicidal crisis/ suicide attempt/ SI) during the 10 year follow up period, compared to only 83% of patients who had reported significant suicidality at baseline (Shrivastava et al., 2010). With regard to socio-demographic factors, similar findings were found in both the studies. Neither the socio-demographic factors such as gender, socioeconomic status, area of residence, years

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of education, religion, marital status, family type were found to be significantly associated to SI in patients with clinical symptoms of schizophrenia nor they were found to be predictive of suicidal status at the end of the 10-year follow-up among clinically improved patients.

As for clinical factors, family history of psychiatric illness including suicide, personal history of co-morbid substance use, previous attempts, and a negative attitude toward psychotropics, different domains of schizophrenic psychopathology such as positive, negative, emotional, and co-morbid depression were found to be significantly associated to SI in patients currently having clinical symptoms of schizophrenia. Both total illness duration and duration of untreated psychosis were not significantly associated with their SI (Nath et al., 2021).

In individuals who were diagnosed with ADHD symptoms in childhood, significantly higher odds for suicidal thoughts in adulthood has been reported (Jaisoorya et al., 2019).

Two independent studies have focused on different aspects of SI among injecting drug users. While one reported 53% of them to have SI in the past 12 months (Sarin et al., 2011, 2013). Several social and clinical features being associated with SI in this group is also noted (Armstrong et al., 2014).

Table 6 presents detailed information on prevalence and correlates of SI among patients with psychotic and other symptoms (current/retrospective).

Table 6 Studies evaluating SI among patients with Psychotic and other symptoms.

S	Ref	Sample	Region	Year	Type of study	Scale	Diagnosis	Prevalence of SI	Factors associated to SI reported
1	(Babu et al., 2008)	82 women diagnosed of postpartum psychosis (of age ranging 18 to 32 years).	NIMHANS, Bangalore	2006-2007	Cross sectional study in a hospital based population	Comprehensive Psychopathology Rating Scale	Post partum psychosis	38% reported SI.	Significant: - Infanticidal thoughts - Depression - Insidious onset of illness Non-significant: - Gender of the infant
2	(Rajkumar, 2018)	29 outpatients with a diagnosis of ATPD	-	2014	Retrospective study	-	Acute and transient psychotic disorder (ATPD)	55.17% of them to have experienced SI during a psychotic episode.	Significant: - later age of onset - family history of depression
3	(Shrivastava, 2018)	61 long term	Non -	2018	Retrospective	Global	Schiz	All of the	No socio-

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	tava et al., 2010)	term clinically improved schizophrenia patients at the endpoint of a 10-year follow-up.	governmental psychiatric treatment centre in Mumbai	10	tive study	Assessment of Functioning (GAF).	ophrenia	patients reported significant suicidality at the end of the study, whereas only 83% had reported previous significant suicidality at baseline.	demographic and clinical variables at baseline were predictive of suicidal status at the end of the 10-year follow-up.
4	(Nath et al., 2021)	140 Schizophrenia patients in the age group of 18 to 65 years (mean age of 31.1 years) with a diagnosis of schizophrenia in a tertiary mental hospital in north east India.	North east India	20 21	Cross-sectional study	International Suicide Prevention Trail (InterSePT) scale for suicidal thinking. (translated to local language)	Schizophrenia	29.3% had current suicidal ideation	Significant: Previous suicide attempt, family history of psychiatric illness and suicide, comorbid substance use, comorbid depression and different domains of schizophrenic psychopathology. Non-Significant: Socio-demographic factors and clinical factors such as duration of illness.
5	(Jaisoorya et al., 2019)	5784 students from 58 colleges in Kerala	Kerala	20 19	Retrospective survey	Relevant unstructured questions	ADHD in childhood	-	Significant: Participants with childhood ADHD symptoms had greater

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									odds for SI.
6	(Sarin et al., 2013)	49 injecting drug users (All male).	Delhi	2004-2005	Observational study	Structured questions	Injecting drug users	23% reported SI.	Significant: -sharing used syringes
7	(Sarin et al., 2011)	Injecting drug users (IDU) in Delhi, with mean age of 33 years	Delhi	2007	Cross sectional study	Structured questions	Injecting drug users	57% reported SI.	Significant: -human rights abuse -cumulative number of abuses
8	(Armstrong et al., 2014)	420 People who inject drugs (PWID) aged 18 years and above (mean age of 36 years)	Delhi	2012	Cross sectional survey	Structured interview adapted by suicide behavior questionnaire.	Injecting drug users	53% of them to have thought about killing themselves in the past 12 months.	Significant: -more female sexual partners -more likely to have had unprotected sex with paid female partner. -share needles and syringes -Symptoms of depression -Symptoms of Anxiety -poor physical health -housing insecurity -experience of violence and sexual abuse

4. Psychosocial correlates and SI

We found 25 studies (of the 68) that focused on understanding the psychosocial correlates of SI. Among the several psychosocial factors observed, low education, academic stress, alcohol use, and low social support were found to be the risk factor for SI, whereas, correlates of factors such as socioeconomic status and religion to SI had contradictory findings. Psychosocial correlates to SI were observed in both population based and specific

group studies. Results of the studies reflecting these findings are described in further sections.

4.1 Religion

Two contradictory findings were observed with regard to religion and SI. Hindu religion and caste discrimination or caste conflict in the community was found to be a risk factor for SI (Francis & Bance, 2017; Sidhartha & Jena, 2006). On the other hand, a study observed that religion could be a protective factor for SI (Khan et al., 2016).

4.2 Socio-economic status and Education

Several studies reported socio-economic status and/or education to predict SI significantly (Halli et al., 2021; Jordans et al., 2018; Khan et al., 2016; Nath et al., 2012; Soni et al., 2017; Supraja et al., 2016; Thakur et al., 2015b). Students from economically disadvantaged family were found to have higher levels of SI than those from wealthier families (Jordans et al., 2018; Khan et al., 2016). A rural based study that focused exclusively on women reported women with SI to be more likely from lower income group (Soni et al., 2017). However, a study on pregnant women has found SI to be more among women from middle socio-economic status (MSES) than those from Low socio-economic status (LSES) (Supraja et al., 2016). However, an international collaborative study reported no association between economic status and SI in India (Jordans et al., 2018). This difference in the influence of Socio economic status (SES) noted among the studies, stresses on the fact that India being in an economic transition, socioeconomic status might impact individuals with different levels of economic status differently (Supraja et al., 2016).

Further, all four studies which attempted to understand the association between education and SI reported low education to be a risk factor for SI (Jordans et al., 2018; Kumar et al., 2021; Soni et al., 2017; Thakur et al., 2015). A study based on geriatric population also supported this by reporting significant difference in SI between literates and illiterates (Shoib et al., 2020). SI is reported to be significantly higher among adolescents who have never attended/dropped out of school than those who are currently attending (Kumar et al., 2021). Another student based study noted children of higher educated mothers to have low SI than their counterparts (Thakur et al., 2015).

4.3 Academic stress

Academic stress is reported to be associated with suicidal ideation among students (Arun et al., 2017; Khan et al., 2016). As a corollary, a study specifically found higher SI among academically typically achieving students than the students with academic difficulty and students with specific learning disability (Arun et al., 2017). However, both the studies report the association between academic stress and SI to be mediated by coping strategies and adequate social support (Arun et al., 2017; Khan et al., 2016). Additionally, running away from school (Khan et al., 2016) and not attending regular school or college (Pillai et al., 2009) were also found to be positively associated with SI.

Also, contrasting findings with regard to SI among students of different streams were observed. One study reports high SI among medical students (Desai et al., 2021), while the other finds non-medical students to have significantly higher psychological stress than medical students (Bhat et al., 2018).

4.4 Alcohol use

Studies have observed alcohol use to be a risk factor for SI with 62% of people diagnosed with alcohol use disorder to have current SI(Halli et al., 2021; T. S. Jaisoorya et al., 2018; Pillai et al., 2009; Raveendranathan et al., 2020; V Rahoof et al., 2021). Even low risk alcohol users are noted to have more severe SI compared to abstainers(Jaisoorya et al., 2018), with female alcohol users to report more SI than male users(Raveendranathan et al., 2020). Wives of men with alcohol dependence syndrome is found to have a significantly higher suicidal behavior including lifetime SI compared to wives of males with no substance use disorder(Patkar et al., 2021). However, as observed with respect to academic stress, the association between alcohol use and SI and vice versa is also believed to be mediated by several other socio-demographic variables such as economic stability, comorbid mental disorders and perceived social support(Jaisoorya et al., 2018).

4.5 Social support and other psychosocial factors

Several studies included in this review have commonly agreed upon the significance of social support to predict SI. All the studies have found individuals having stronger source of social support to have lower risks for SI(Beattie et al., 2019; Khan et al., 2016; Kumar et al., 2013; Pillai et al., 2009; Sidhartha & Jena, 2006; Singh et al., 2020; Singh et al., 2012; Sivasubramanian et al., 2011; Supraja et al., 2016).Studies that focused on student population have reported several aspects of ‘social support’ to be a risk factor for SI. These aspects are listed in table 7.

Two studies have reported contradictory findings. One study reports not living with parents to be a risk factor for SI(Pillai et al., 2009) whereas, the other reports students staying with their families to have higher scores of psychological distress(Bhat et al., 2018). These findings can be understood by noting the results of another study as well which reports social support to have the potential to mediate the association between academic stress and SI(Khan et al., 2016).Further, among pregnant women, perceived poor social support, and physical and sexual abuse from their intimate partner was reported to be a predictor of SI(Supraja et al., 2016).Even studies that reported results on specific groups (such as on men having sex with men) have observed those with greater social support satisfaction to be in decreased risk of having SI(Sivasubramanian et al., 2011).Sexual/physical abuse is reported to be an indicator to have SI among adolescents(Beattie et al., 2019; Kumar et al., 2021). SI is also found to be significantly higher among adolescents whose mothers are physically abused (Kumar et al., 2021).Trauma (any form of abuse) or adverse childhood experiences are also said to be positively correlated to SI(Singh et al., 2012).Hence, by all these findings, it can be collectively understood that adequate social and emotional support from the family, good relations with teachers, helpful classmates etc. can have the potential to lower the rate and prevalence of SI(Thakur et al., 2015) across different groups of population. Table 7 presents information from studies that show association between SI and psychosocial and social support factors.

Table 7 Various psychosocial and social support factors significantly associated with SI.

	Psychosocial Factors	Social Support
1.	Hopelessness(Latha& Bhat, 2005; Shoib et al., 2020)	Poor parental support (Sidhartha & Jena, 2006)
2.	Anxiety(Chandra et al., 1998; Chaudhury et al., 2013; Halli et al., 2021; Sivasubramanian et al., 2011)	Being neglected by parents(Sidhartha& Jena, 2006)
3.	Psychological distress(Chandra et al., 1998; Chaudhury et al., 2013; Pillai et al., 2009)	Difficulty in talking to parents about personal problems(Beattie et al., 2019; Pillai et al., 2009)

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		2009)
4.	Previous/current psychiatric disorders(Chandra et al., 1998; Jordans et al., 2018; Pillai et al., 2009)	Family issues(Singh et al., 2020; Thakur et al., 2015a)
5.	History of suicidal attempt(Singh et al., 2012; Supraja et al., 2016)	Affectionless control style of parenting(Singh et al., 2012)
6.	Unemployment(Singh et al., 2020)	Physical abuse by parents(Pillai et al., 2009; Sidhartha & Jena, 2006; A. Singh et al., 2020; S. Singh et al., 2012; Thakur et al., 2015)
7.	Low self esteem(Bhola et al., 2014; Sivasubramanian et al., 2011)	Not living with parents(Pillai et al., 2009)
8.	Economic abuse on women(Kanougiya et al., 2021)	Staying with families(Khan et al., 2016)
9.	Wanting to change physical appearance among gender minorities(Halli et al., 2021)	Adolescents having a role model (Kumar et al., 2021)
10.	Body image conscious among adolescents(Thakur et al., 2015)	Social media usage and mass media exposure (Kumar et al., 2021)
11	Impulsive behavior (Kumar et al., 2021)	
12	Depressive symptoms(Kumar et al., 2021; Pavani et al., 2021)	

5. Intervention and other studies

Among 68 articles selected for the review, only 3 were intervention studies that focused on understanding the effect of specific therapeutic intervention in preventing SI. While, few studies have attempted to understand the role of rehab programs and helpline services in preventing/managing SI(Chavan et al., 2012; Mittal et al., 2020; Ragesh et al., 2020; Salve et al., 2012), other studies have focused on the attitude towards SI and help seeking behavior(Jordans et al., 2018; Saraf et al., 2018; Shah et al., 2020). Although these intervention studies were conducted on specific groups (such as students with SI, drug users, acid attack victims and refugees), no study was carried out in a hospital setting.

5.1 Specific intervention studies

In studies that have focused on understanding the effectiveness of specific therapy or rehabilitation services to manage SI, effectiveness of mindfulness based Cognitive behavior therapy(CBT) on students diagnosed with depression and SI(Raj et al., 2019), feasibility of regular contact and use of safety planning cards (CASP) by community volunteers (CVs) among refugees(Vijayakumar et al., 2017), efficacy of multiple intervention strategies such as nutrition, health education, drug substitution, regular health checkups, medical referrals, and detoxification among drug users (Sarin et al., 2013) and removing shame and guilt, enhancing self-esteem and self-efficacy, providing social support, removing cognitive distortions, and promoting acceptance of their victimization experience among acid attack victims(Mittal et al., 2020) as rehabilitation services have been evaluated.

In the post intervention assessment of SI, only studies that focused on providing mindfulness based CBT to depressed students and rehab services to acid attack victims reported higher level of improvement in their SI(Mittal et al., 2020; Raj et al., 2019).

The post assessment of the study that focused on rehab services provided to drug users, revealed that the suicidal ideation and suicide attempts did not decrease over the study period; rather these measures remained constant throughout while the number of participants reporting suicide plan increased over the study period despite access to a broad range of intervention services(Sarin et al., 2013). Similarly, CASP by community volunteers on refugees revealed no statistically significant difference between baseline SI and SI after follow up. However, participants viewed the safety planning card as a lifeline as it gave

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them ready access to a support system in times of crisis (Vijayakumar et al., 2017). The findings and inferences of the specific intervention studies/ rehab services are presented in Table 8.

Table 8. Various intervention studies in relation to SI.

Sl No	Ref	Sample	Region	Year	Aim of the study	Type of study	Intervention type	Results
1	(Raj et al., 2019)	30 school students diagnosed with depression and SI.	Sikkim	2017	To investigate the effect of mindfulness based cognitive behavior therapy on life satisfaction and life orientation in adolescents with depression and suicidal behavior.	Specific therapy based intervention study	Mindfulness based CBT for 16 weeks	Pre and post test revealed a significant reduction in depressive symptoms and suicidal ideation.
2	(Sarin et al., 2013)	449 injecting drug users.	Delhi	2004 - 2005	To examine the trends in SI and its association to injecting practices among drug users.	Observational study	Sequential interventions which included nutrition, health education, drug substitution, regular health checkups, medical referrals, and detoxification and rehabilitation facilities with follow up interviews every 3 months for a period of two years.	Suicidal ideation did not significantly change over 12 months of observation, while suicide plans actually increased over the time period.
3	(Vijayakumar et al., 2017)	639 refugees from intervention and 664 from control camps in Tamil Nadu aged 18 years above.	Refugee camp in Tamil Nadu	2017	To assess the feasibility of CASP by CVs in reducing suicidal behaviour among refugees residing in camps in	Household survey and focus group discussion.	Regular contact and use of safety planning cards (CASP) by community volunteers for a period of 15 months.	No statistically significant difference between baseline SI and SI after follow-up. Participants viewed the safety

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					Tamil Nadu.			planning card as a lifeline as it gave them ready access to a support system in times of crisis.
4	(Mittal et al., 2020)	Young female acid attack victims in the age group of 18-25 years.	Uttar Pradesh	2020	To explore the role of psychological makeup in the psychological rehabilitation of acid attack victims.	Narrative study	Rehabilitation services	Post rehabilitation program, the victims developed more adaptive psychological makeup.

5.2 Role of helpline services

A steady decline in the number of suicides in Chandigarh city is reported following the set up of 24 hour telephonic helpline for persons in crisis due to mental health issues(Chavan et al., 2012).This is anticipated by the trends of around 10.6% of people who attend mobile mental health clinic to have SI(Salve et al., 2012) with 91% reporting it to be useful and 95% saying they would recommend it to others(Ragesh et al., 2020).Further, a unique study conducted in Kerala revealed perceptions and beliefs on “spirituality” as a protective factor contributing to the positive adaptation during stressful situations. Participants stated very specifically that they experienced “prayer” as strength when they had persistent thoughts of suicide(Francis & Bance, 2017).

5.3 Help seeking behavior for SI and other studies

According to a survey that was conducted on young women (16-19 years of age) in urban slum settings, 63% of them could correctly identify the condition suicidality, but the participants did not think their condition of SI needed urgent intervention. Only 2.4% of them considered mental health professionals as possible sources of help. Majority of the young women felt friends and parents were sources of help(Saraf et al., 2018). This result is further supported by another international collaborative study conducted across five low and middle income countries(LMIC) which found no help seeking at all for suicidal ideation in India compared to other countries (Jordans et al., 2018). In India, this low help seeking behavior for SI is reported in general population(Bhola et al., 2014)as well as in specific groups (Mittal et al., 2020). However, a study that aimed to evaluate the ability of the video tool to educate the community on topics related to mental health found participants post this workshop reporting a significant favorable improvement in their attitude towards SI(Shah et al., 2020).

On the other end, two independent studies were conducted to identify the nature of the deficits in suicide prevention training for health care professionals. The results of a study revealed that the training gaps in suicide prevention exist across the health care professions. They rated their knowledge about suicide and helping a suicidal patient to be low or medium and believed they would greatly benefit from additional training to enhance their suicide risk assessment and intervention skills (Eynan et al., 2015; Shah et al., 2016). In addition, a recent study that aimed to assess the quality of online media reporting of a recent celebrity

suicide found only 13 % articles provided information about where to seek help for suicidal thoughts or ideation (Ganesh et al., 2020).

DISCUSSION

1. Prevalence of SI in general population

Studies in the review have collectively reported the prevalence of SI among adolescents to be in the range of 3.9% to 30.9%. This is high compared to the 3.5% of SI reported by national mental health survey conducted on individuals above 18 years (Amudhan et al., 2020). These rates are likely to be the realistic estimates among youth, given the likelihood of concealment and underreporting of such thoughts. Developmental perspectives such as rapid biological and psychological changes explain this dramatic upsurge of suicidal ideation during this life stage (Bhola et al., 2014; Singh et al., 2012). Although a pattern of older adolescents in the age group of 15-18 years was observed to be more vulnerable (Beattie et al., 2019; Sidhartha & Jena, 2006; Thakur et al., 2015), national mental health survey that worked on individuals 18 years and above reflects on the fact of steady increase in the prevalence of SI to the age of 40-49 years (Amudhan et al., 2020). Added to this, higher prevalence of SI reported among geriatric population (Amudhan et al., 2020; Shoib et al., 2020) indicates, in a developing country like India, the lack of mental health facilities and stigma attached to suicide would contribute to higher rate of SI among elderly population as well, in spite of the assumed family and social support in old age unlike in western countries (Shoib et al., 2020).

This reflects on the need for age specific preventive measures such as integrating counseling resources and life skills programs into the educational system for students/adolescents (Bhola et al., 2014) and community mental health programs for older groups to improve mental health and prevent suicide across different age groups in the country (Shoib et al., 2020). Along with this, in India where help seeking for SI is low (Jordans et al., 2018), the current national policies and programs should prioritize the suicide prevention related agenda (Thakur et al., 2015).

Further, findings of the studies that being female is a risk factor for SI is understandable in a LMIC like India where factors such as females being more vulnerable to social discrimination, physical and sexual abuse are reported (Pillai et al., 2009; Vijayakumar et al., 2021). This is reaffirmed by the results of national mental health survey (NMHS) which stated for any suicidality level, women have a higher prevalence than men in most of the states in the country.

Studies reporting higher SI among males (Viswanathan et al., 2019) argue on the fact that cultural expectation generates higher stress for success (especially in finance) among men than among women resulting in higher SI among men (Khan et al., 2016; Viswanathan et al., 2019). However, NMHS supports this causal factor of economic difficulty as the risk factor for SI among men but explains gender paradox for suicide (women being more likely to experience suicidality and less likely to die from suicide than men are) by reasons such as differences in causes, underreporting, availability and choice of means for suicide, differences in care seeking, availability of care, cultural differences in perceiving suicidality or suicide as a method of coping with stress or conflict, and/or differences in the gendered social roles (Amudhan et al., 2020). Additionally, findings such as no significant difference in the prevalence of SI among genders in an urban based study and high risk of SI among women specifically in rural areas in a rural based study (Nath et al., 2012) indicate how

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traditional patriarchal society in rural and changing gender roles in urban areas can influence one's psychological makeup and hence SI (Nath et al., 2012).

However, a clear contrast in the prevalence of SI in general population of urban and rural areas is reported. The prevalence of SI in urban areas was distinctively high compared to prevalence of SI in rural areas. Although national mental health survey reports a distinctive difference with urban metropolitan to have higher prevalence rate than urban non metropolitan areas, with the results of the studies selected, such clear demarcation could not be made in the present review. Reasons such as strong social support, underreporting, lack of awareness in the rural population could be contributing for lower prevalence of SI in them (Malhotra et al., 2019). While, complexities of urban life such as low social support, rapid and unplanned urbanization, greater prevalence of violence, substance abuse, influence of social media and less parental control, peer pressure, higher societal expectations on the students could be few out of many reasons contributing to higher prevalence of SI in urban areas of the country (Mukhopadhyay et al., 2012).

Regarding regions, the range reflected a large regional imbalance in the prevalence of SI across the country. This finding is in line with reports from a national mental health survey as well. This difference could be attributed to differences in literacy attainment, geographical heterogeneity in culture, religious composition, urban and rural composition, socioeconomic development, the health-care system found in different regions of the country, etc. Added to this, differences in the methodologies adapted, assessment scales used and study approach would have led to the disparity in the prevalence of SI reported in different regions of the country.

2. SI in specific groups

The trend of high prevalence and rate of SI in specific groups (such as gender minorities, men having sex with men, HIV infected individuals, injecting drug users, Tuberculosis patients) compared to the general population is striking in the studies selected for the review (Armstrong et al., 2014; Chandra et al., 1998; Halli et al., 2021; Latha & Bhat, 2005; Sivasubramanian et al., 2011; Viswanathan et al., 2019). This suggests how the varying degree of stigma and discrimination towards these specific groups rooted in the ideological society and faced within the family and society can lead to greater vulnerabilities among them (Kundu et al., 2021). Observations such as a significant correlation between pesticide exposure and SI in a rural community (Pavani et al., 2021) stresses on the need to know the underlying reasons leading to SI among these specific groups. Thereby, a supportive therapeutic relationship can be established conveying promising attitude to alleviate their underlying emotional/physical pain (Latha & Bhat, 2005). Also policy makers should be sensitized to generate more inclusive policies that are more appropriately tailored to the distinctive needs of specific groups (Halli et al., 2021).

3. SI among psychiatric patients

The prevalence of suicidal ideation among the patients of psychiatric disorders (such as depression, OCD, ATPD and post partum psychosis) as reported by the studies (Babu et al., 2008; Chaudhary et al., 2016; Gupta et al., 2014; Jaisoorya et al., 2019; Kamath & Reddy, 2007; Lalthankimi et al., 2021a; Owusu et al., 2020; Rajkumar, 2018; Trivedi et al., 2013; Umamaheswari et al., 2014) is high compared to the findings of National Mental Health Survey, India, the latter being conducted among the general population. The findings of a comparative study also report higher prevalence of SI in mental health facilities (5% to 14.8%) than among community samples (3.5% to 11.1%).

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As several studies suggest suicidal ideation to be proportionate with the severity and other clinical features of depression and OCD (Lalthankimi et al., 2021; Trivedi et al., 2013; Umamaheswari et al., 2014), every effort needs to be made to reduce the severity and chronicity of the depressive episodes to prevent suicidal behavior in patients with depression (Umamaheswari et al., 2014). In addition, addressing other features that mediate the association between depression and SI such as symptoms of insomnia, co-morbid disorders, hostility and substance abuse could be an important strategy in preventing suicide. Among OCD patients, although co-morbid depression is reported to elevate the risk of SI (Brakoulias et al., 2017), in several studies OCD alone has emerged as an independent predictor of SI (Gupta et al., 2014). This finding suggests that the presence of SI in patients of OCD cannot be explained by depression per se (Gupta et al., 2014). Various other factors such as severity of OC symptoms, specific type of OC symptoms, severity of anxiety symptoms, hostility, poor insight, level of hopelessness contributing to SI is observed. This reflects on the need for clinicians to be made aware that patients of OCD must be screened for suicidal behavior even in the absence of depression (Gupta et al., 2014).

Studies have also reported the role of treatment and treatment adherence to significantly influence the outcome of suicidal behavior among psychiatric patients (Umamaheswari et al., 2014). Hence, it can be concluded that vulnerable group of patients such as of depression and post partum psychosis (Babu et al., 2008) should be routinely screened for the presence of suicidal ideations. Also, those who have suicidal ideations in the presence of other risk factors such as severe depression, anxiety symptoms, psychotic symptoms, hostility and longer duration of the current episode should be monitored closely with active treatment strategies to decrease morbidity and mortality (Umamaheswari et al., 2014).

However, findings of two distinct studies clearly indicate that clinical improvement/ treating a psychiatric disorder is not a key element in decreasing suicide risk (Jaisoorya et al., 2019; Shrivastava et al., 2010). On the contrary, improvement of the psychiatric symptoms may lead to awareness of the illness, and suicide risk may be the result of painful insight into one's own impairment. Hence, suicide prevention requires a specific enquiry and intervention (Shrivastava et al., 2010). These findings are relevant to the claim that social stressors play an equally or more important role in suicidality in India compared to psychopathology.

In addition, even though religiosity and spirituality is assumed to have an important role in India, a study has reflected that religiosity could be a risk factor for depression but possibly does not contribute to the conversion of a patient with suicidal ideation to a suicidal attempt. Although negative religious coping is observed to be a risk factor for suicidal attempt (unlike those only with SI), further exploration on the same is beyond the scope of this review. Hence, it can only be said that it is important for clinicians to evaluate their patient's religious coping mechanisms as well in planning for integrated assessments and interventions (Dua et al., 2021).

4. Psychosocial correlates and SI

Several studies in the review have marked the significance of psychosocial factors with regard to SI. Studies have noted contradictory findings regarding the role of religion as a risk/ protective factor for SI (Khan et al., 2016; Nath et al., 2012; Sidhartha & Jena, 2006). This reflects that although religious involvement can be a protective factor against suicidal ideation, India's Hindu cultural belief such as cycle of rebirth vs. suicide considered as a sin in other religions may partly help explain the higher SI among Hindus (Khan et al., 2016;

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Sidhartha & Jena, 2006). Along with this, caste discrimination found to be significantly associated with SI in a study (Nath et al., 2012) suggests that, in a contemporary Indian society, in spite of the educational and economic interests of lower castes being promoted through constitutional provisions, discrimination against lower castes continues to influence their psychological well-being (Nath et al., 2012).

Further, a significant association between academic stress and SI found in the studies might be owed to the relatively strong cultural focus on the academic achievement among Indians (Khan et al., 2016). Higher SI among academically achieving students reflects on the fact that parents and teachers have markedly different expectations from students having different levels of academic ability with higher expectations from students who are good in academics (Arun et al., 2017). Added to this, lack of resources for higher education, poor employment prospects and pressure to find employment could lead to higher levels of SI among students from low income group (Nath et al., 2012). Also, contrasting findings with regard to SI among students of different streams could be attributed to several underlying factors such as family support, living arrangement of the students, and perceived academic stress to have mediated the association between educational stream and SI (Bhat et al., 2018; Desai et al., 2021). Hence, in a developing country like India, where there is a remarkable difference in the attitude of society towards various educational streams, understanding this aspect would help in adding stream specific intervention components to the existing interventions (Bhat et al., 2018).

The comprehensive understanding of the studies in this review reporting females, young adults, low income group, low education and alcohol use as the 'at risk' population to have SI is supported by the large scale national mental health survey results as well (Amudhan et al., 2020). This should be noted by suicide prevention programs to develop more effective prevention plans and strategies formulated specifically for the vulnerable group (Bhola et al., 2014).

5. Intervention based and other studies

A comprehensive understanding of the findings of the intervention studies selected for the review reflects on the fact that although having community volunteers appears to be more practical and feasible solutions to SI in LMIC like India, several other social factors such as stigma, financial difficulties etc. are significantly associated with suicide. Therefore, linking the intervention programs with employment and income generating opportunities, and improving their support systems can help in mitigating their psychological distress, thereby reduce SI.

According to WHO Mental Health Atlas 2017, only 10% of LMICs have adopted a national suicide prevention strategy, among which few have focused on targeted interventions for vulnerable groups, who are at a relatively higher risk (Vijayakumar et al., 2021). Hence, providing specific therapy-based interventions and rehab services to specific groups would help alleviate resolving their specific risk factors. In addition to this, a large scale awareness program on issues related to stigma and resources available for suicide prevention, actions having long term impact such as training vulnerable group with coping skills to deal with stressful situations and in parallel training health care professionals to enhance their professional competency to deal with suicide prevention and overall more proactive efforts to enhance the reach of the program is needed to accelerate the effectiveness of any suicide prevention strategy.

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Further, the results of the unique study focusing on spirituality and SI are a reminder for the mental health professionals to be open-minded towards the diversity of the beliefs of their clients especially in the context of Indian culture. This will serve as a holistic approach in the services provided to individuals with suicidal ideation (Francis & Bance, 2017).

Limitations

Despite an effort for a comprehensive review on SI in India, the present review is limited in its scope such that only papers published in English language journals in 'PubMed' database are included. Studies or reports or editorials in vernacular which may have contributed to greater understanding of contextual factors related to SI are excluded. Also, the present review did not include studies which used additional treatment strategies such as pharmacological management of SI. Studies that reported association of SI to several biological variables were also excluded. However, this becomes more important in determining the effectiveness and importance of multidimensional understanding and approach to prevent and manage SI.

Further, in the studies there is a lack of clear distinction made in the operational definitions of the terms. The cross-cultural differences in SI definition leading to overlapping in the understanding of self-harm, suicidal ideation or attempts or suicide crisis may have contributed to differential SI reporting, prevalence rates, limiting the validity of cross-country comparisons of SI prevalence and correlates. Added to this, a large imbalance in the number and nature of studies conducted across different regions of the country is observed which may restrict the generalisability of the findings to the whole country or to any LMIC in general. In order to have broad inclusion of relevant studies, structured vs. unstructured therapies, standardized assessment scales vs. unstructured interviews, power of statistical methodologies adapted in the studies selected were not focused in the present review. However, this may also further weaken the generalisability and validity of the findings reported. Hence, a formal meta-analytic review might supplement our preliminary analysis in vital and empirically sound ways.

However, this review is the first of its kind to provide an extensive overview of the patterns, prevalence, and correlates of SI exclusively, in India. This discrete approach helps to grasp the prospects of SI in suicide burden independently. Unlike in other noted international collaboration studies on SI among LMIC, this review aids to comprehend the trends and propensity of SI in India particularly.

Recommendations

The review suggests important directions for future SI research. First, considering the large geographical area, population and diversity in the country, more SI related research is needed in varied regions and specific communities of the country. That would provide greater generalisability of the findings. Second, majority of the studies reporting SI in patients have focused only on disorders such as depression and OCD. Future research should unveil the role of SI in people with different psychiatric disorders and even in their caregivers. Third, majority of the studies in the review have used cross sectional survey methodology. Longitudinal studies with mixed method study designs help us in better understanding of the patterns of SI. Fourth, culturally validated tools should be used and new tools for local settings should be developed. Fifth, sample size of most of the studies included is small. More research with larger samples is required to understand the effect of SI on suicide burden. Sixth, large majority of studies found in the literature were on prevalence and correlates of SI, and intervention-based studies centered on SI specifically

were limited. This reflects on the need for more qualitative and intervention studies. It urges researchers to pivot their studies more on the application and effectiveness of specific interventions. Further, development of comprehensive, contextually adapted interventions involving multiple levels such as intrapersonal, interpersonal, community, organizational and governmental levels is needed. Intervention studies targeting different population groups and across the country is required.

CONCLUSION

The present paper strengthens our understanding of the course of SI in India. The findings mark the importance of recognizing patterns, prevalence and correlates of SI in the nation. As national survey realizes SI to be the most prevalent suicidality phenomenon, all psychosocial factors that may aggravate this SI to suicide action process have to be addressed timely with specific procedures and interventions. In a country like India which lacks standardized policies and management approach for SI, this review highlights the need for a systematic suicide prevention strategy that combines multiple sectors at a national level.

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Conflict of Interest

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List of abbreviations:

ADHD	Attention Deficit Hyperactive Disorder
ATPD	Acute Transient Psychiatric Disorder
BPAD	Bipolar Affective Disorder
CASP	Contact And use of Safety Planning cards
CBT	Cognitive Behavior Therapy
COVID-19	Corona Virus Disease-19
CV	Community Volunteers
GAF	Global Assessment Functioning
HIV	Human Immuno-deficiency Virus
HP	Himachal Pradesh
IDU	Injecting Drug Users
LMIC	Low- and Middle-Income Countries
LSES	Low Socio-Economic Status
MDD	Major Depressive Disorder
MSES	Middle Socio-Economic Status
NCRB	National Crime Records Bureau
NIMHANS	National Institute of Mental Health and Neurosciences
NMHS	National Mental health Survey
OC	Obsessive Compulsive
OCD	Obsessive Compulsive Disorder
PHQ	Patient Health Questionnaire
PWID	People Who Inject Drugs
SBQ-R	Suicide Behavior Questionnaire- Revised
SES	Socio-Economic Status
SI	Suicidal Ideation
SRQ-20	Self-reporting Questionnaire-20
UP	Uttar Pradesh
WHO	World Health Organization