

Non-Fatal Suicidal Behaviors in Adolescents

S. Jena*¹, T. Sidhartha²

ABSTRACT

In the USA, suicide ranked as the third leading cause of death for adolescents in 1999. Non-fatal suicidal behaviours are suicidal thought, specific suicidal plan and suicide attempt. Prospective studies have emphasized the high subsequent suicide rates in clinically presenting suicide attempters. This study was planned to critically review the existing international literature on this area, and compare, if possible, with the Indian data. Both electronic and manual search for published and unpublished works was done for the review of this area. Both international and Indian studies on prevalence, risk factors, management, and prevention of non-fatal suicidal behaviours in adolescents were collected, analysed and reviewed. The study concludes that professionals, like general practitioners, paediatricians, school teachers, school counselors, need to be trained in identifying non-fatal suicidal behaviours in adolescents, and know when to refer them to a mental health professional or mental health service for thorough assessment and effective management. Timely and efficient management of non-fatal suicidal behaviors can prevent future suicidal attempts and completed suicide in most of this highly vulnerable population. Indian studies are very few and without robust study design. Systematic studies in India on this important topic are required.

Key words: suicide, suicidal ideation, suicide attempt, adolescents

Introduction

Suicidal behaviours represent a spectrum, ranging from suicidal ideation, to suicidal plan, to suicide attempt, to completed suicide. Non-fatal suicidal behaviors (NFSB) include all these behaviors except the completed suicide. Suicide attempt, as conceptualized currently, is a potentially self injurious action with a non-fatal outcome for which there is evidence, either explicit or implicit, that the individual intended to kill himself or herself (Moscicki, 1997). The most frequently endorsed motives for self-harm, reported by attempters, were to die, to escape, and to obtain relief (Boergers et al., 1998). Deliberate self harm (DSH) or parasuicide is to indicate that the behavior is not accidental while making no presumption about the presence of a desire for death (Campbell, 2004). DSH is an umbrella term for any self harm behavior with or without the intent to kill self, while suicide attempt has definite intent to kill self. As prospective studies have emphasized the high subsequent suicide rates in clinically presenting suicide attempters (Hawton et al., 1993), the evidence, linking NFSB to later completed suicide, has brought a particular focus on the study of NFSB. Across different cultures, the prevalence of NFSB has been found to be alarmingly high among adolescents. In the USA, suicide ranked as the third leading cause of death for adolescents in 1999, accounting for 12.7%

of deaths in this age group, after motor vehicle accident and homicide (AACAP, 2001). A literature search, both manual and electronic, was done to collect all possible published materials on NFSB in adolescents with an aim to critically review them, and compare, if possible, with the Indian data.

Prevalence

International Studies: The studies of NFSB have been hampered by the lack of central registries for attempted suicide, a consistently applied standard nomenclature among investigators and by the failure to use clear operational definitions when reporting or collecting data on clinical outcomes (O'Carroll et al., 1996). Some of the important international epidemiological studies have been summarised in the Table 1.

Life-time suicidal ideation rates have ranged from 20 to 54%, and life-time suicide attempt rates mostly lie between 7 and 10%, with some studies showing higher rates of up to 15% (Grossman et al., 1991). One-year prevalence rates for suicide attempts have ranged from 1.5 to 3%. Some studies have shown higher rates of up to 9% (Grossman et al., 1991). Suicidal ideation rates for one-year have shown a wide range from 11 to 62 %.

¹Associate Professor, Dept. of Psychiatry, G.B. Pant Hospital, JLN Marg, Delhi 110 001. E-mail : s.jena@india.com

²Ex. Postgraduate Trainee

*Correspondence

Table 1:

INTERNATIONAL PREVALENCE STUDIES ON NON-FATAL SUICIDAL BEHAVIOURS IN ADOLESCENTS

Authors, Country, Year	Population Studied & Demographic Characteristics	Findings
Russel et al., USA, 2001	N=12000 School students	1-year Prevalence SA ^a - 4%
Patton et al., Australia, 1997	N=1699 15-16 year-old school students	1-year prevalence DSH ^c - 5.1% True suicide attempts - 0.2%
Grossman et al., USA, 1991	N=6637 Navajo (Native American) Adolescents	SA ^a Prevalence Life time- 15% One-year - 9%
Kienhorst et al., Holland, 1990	N=9393 School students aged 14-20	Prevalence Life time SA ^a - 2.2%
CDC, USA, 2003	N=15214, 195 schools 9-12 th grade students, age range 12-19 years	Prevalence rates 1-year serious SI ^b - 16.9 % 1-year SA ^a - 8.5%
Schweitzer et al., Australia, 1995	N=1678 Undergraduate students Mean age- 21	Prevalence 1-year SI ^b - 62% 1-year SA ^N - 6.6%
Choquet et al., France, 1989	N=1600 Community sample Age: 13-16	Life time SI ^b Boys- 14% Girls- 23%
Joffe et al., Canada, 1988	N=1256 Age: 12-16 Community sample	6-month prevalence of SI ^b and/or SA ^a Boys: 5-10% Girls: 10-20%
Fergusson et al., New Zealand, 2000	N=1265 21-year longitudinal study (0-21 years of age)	Prevalence at 21 years SI ^b - 28.8% SA ^a - 7.5%
Lewinsohn et al., USA, 1994	N=1508 1-yr longitudinal study 14-18 year high school students	Life time prevalence SA ^a - 7.1% Males -3.8% Females-10.1% 1-year SA ^a - 1.7%
Wichstrom et al., Norway, 2000	N=9679 (School students) 2-year longitudinal study Age: 12-20	Life time SA ^a - 8.2% Prevalence of SA ^a in the 2-year study period- 2.7%
Borowsky et al., USA, 2001	National representative sample, N=13110 Class: 7 th -12 th	11-month prevalence of SA ^a Girls-5.1% Boys-2.0%

a = Suicide attempt; b = Suicidal ideation; c = Deliberate self harm

Suicidal intent can be assessed by asking specific questions about the various dimensions of intent. Patton et al. (1997), in their study of 15-16 year old adolescents using a self-report questionnaire, found that 12-month prevalence of episodes of self-harm was 5.1%. The percentage of adolescents, who reported an episode of self-harm and responded on the Beck’s Suicide Intent Scale that they had been seriously trying to end their life at the time of attempt, was only 0.2%. They called the later group as true suicide attempters.

Findings from the above studies indicate that there are 15 to 45 non-fatal suicide attempts for every adolescent who dies by suicide (Harkavy-Freidman et al., 1987). Within the 12 months following a suicide attempt, the risk of suicide or another attempt has been estimated to be as high as 100

times greater than those who have never made an attempt.

Indian studies : The estimation of prevalence of NFSB in adolescents in India has not been reported so far. We have conducted a study (unpublished) in two schools in Delhi (Sidhartha et al., 2002). A total of 1205 adolescents, aged 12-18, were asked to fill out a questionnaire. Life-time prevalence rates for suicidal ideation, DSH and suicide attempt were 21.7%, 18% and 8% respectively. One-year prevalence rates for suicidal ideation, DSH and suicide attempt estimated at 11.7%, 6.1% and 3.5% respectively.

Risk factors

Increasingly rigorous research efforts, such as the application of multivariate models to test the causal hypothesis of both completed and attempted suicide, have

S. Jena & T. Sidhartha

expanded scientific understanding of the multiple interrelated risk factors for suicidal behaviours. The cause of a complex outcome, such as suicidal behaviour, actually consists of a constellation of components that act together which vary from one individual to other.

A. Socio-demographic factors

- a) **Age:** Suicide attempts increase in prevalence during the teenage years. Eighty-three percentage of self-inflicted injuries in the adolescent age group occurred between 15-19 years of age (Moscicki, 1997). Brent et al. (1999) reported younger suicide victims showed lower suicidal intent. The increased rate of suicide in older versus younger adolescents is due in part to greater prevalence of psychopathology, namely substance abuse, and greater suicidal intent in the older population.
- b) **Sex:** In the USA, suicide attempts in adolescence are approximately twice as common in females as in males (CDC, 1998). We found higher rates for females in our study (Sidhartha et al., 2002).
- c) **Religion and race :** For a long time, the suicide rates in African American youths were much lower than that for white Americans. We observed Hindu religion as a risk factor for NFSB (Sidhartha et al., 2002). Though the reason for this association has not been studied, traditionally, Hindu religion has given sanction to certain altruistic suicides (Adityanjee, 1986), and the “Sati” ritual, death of widows upon their husband’s funeral pyre, is closely associated with Hindu beliefs.
- d) **Social disadvantage :** A 21-year prospective study of a birth cohort of New Zealanders by Fergusson et al. (2000) found that rates of suicidal behaviours were elevated among young people from low socioeconomic status families. The association persisted even when other confounding and intervening family factors, individual factors, such as psychopathology and other social factors, were controlled.

B. Family environment

- a) **Dysfunctional family :** A series of studies have found elevated rates of suicide attempts among young people aged 15-24 years, exposed to parental discord and disharmony (Beautrais et al., 1992). Research suggests that while parental loss as a result of divorce and separation is associated with an increased risk of non-fatal suicidal behavior among adolescents and young

adults, loss of a parent by death is not (Beautrais et al., 1998, deWilde et al., 1992). Parental loss by death and by separation or by divorce may have different antecedents and potentially different consequences (Tenant, 1988). Adolescents making suicide attempts have been reported to have experienced as many as three changes in parental figures from ages 5 to 15 years (Odds ratios- 2.6) compared with those not making an attempt (Fergusson et al., 1995).

- b) **Parental psychopathology :** Rates of suicide attempts tend to be increased among adolescents and young adults with histories of exposure to parental psychopathology, including depression, substance use disorder, and antisocial behaviour (Brent et al., 1988). Goodwin et al. (2004) studied the familial transmission of suicidal ideation and suicide attempt, and found the familial linkage (parents-offspring) for both.

C. Individual factors

- a) **Psychiatric illnesses :** Most research studies agree that the most important predictors of NFSB in adolescents are the mental health problems in this age group. Fergusson et al. (2000), in their prospective study, found depression to be the strongest risk factor predicting suicide attempt. For substance use, the Odds Ratios (OR) estimates have ranged from 3.5 to 17.3 (Andrews et al., 1992). ORs for conduct disorders and antisocial behaviour have ranged from 3.5 to 17.3 (Andrews et al., 1992, Fergusson et al. 1995, Beautrais et al., 1998). Anxiety disorders have not been found to contribute significantly to risk of suicidal behavior, specially when controlled for mood disorders (Beautrais et al. 1998). Case control studies have failed to show any consistent association between psychotic disorders and suicidal behavior in adolescents (Albeck et al., 1990, Westmeyer et al., 1991).
- b) **Personality factors :** Fergusson et al. (2000) found that, two dimensions of personality – neuroticism and novelty seeking were significantly correlated with suicidal ideation and suicide attempt. Other traits such as low self esteem, perfectionism, external locus of control, impulsivity and aggression have been suggested in literature. But the available research for any specific trait is relatively sparse and often equivocal (Beautrais, 2000).
- c) **Abuse :** Rates of suicide attempt are also increased in young people with history of childhood sexual abuse (Median OR: 4.8) (Garnefski et al., 1997). We found

Non-Fatal Suicidal Behaviors in Adolescents

physical abuse by parents to be a risk factor (Sidhartha et al., 2002). However, a study by Beautrais et al. (1992), which has controlled for confounding factors, found that physical abuse was not a significant predictive factor when other factors were taken into account.

- d) **Sexual orientation** : In the last few years, there have been a number of studies, which have found an increased risk of suicide attempt among gay lesbians and bisexual youths (Bagley et al., 1997).
- e) **Genetic factors** : Twin and adoption studies have shown an elevated risk of suicidal behaviours in monozygotic twins as compared to dizygotic twins (Roy et al., 1991). There is also consistent evidence to suggest that a family history of suicidal behavior is associated with an increased risk of suicide attempt in young people (Harkavy-Freidman et al., 1987).
- f) **Biological factors** : Research has largely focused on the extent to which low or below average levels of neurotransmitter 5-HT and/or its metabolite 5-HIAA are associated with increased risk of suicidality (Cocarro et al., 1989).
- g) **Medical illnesses** : After controlling for age, race/ethnicity, alcoholism, depression, and hopelessness, the adjusted OR for men was 4.76 [95% Confidence Interval (CI: 1.87-12.17)], whereas the adjusted OR for women was 1.60 (95% CI: 0.62-4.17), suggesting that young men with medical conditions are at increased risk for nearly lethal suicide attempts (Ikeda et al., 2001).

D. Environmental and contextual factors

- a) **Factors related to problems in school and with the peer group** : Hawton et al. (1982) had found that problems in school were reported by as many as 50% of suicide attempters, in the past month. The importance of the peer group is underscored by the fact that, in some studies, suicide by a friend has been found to be a significant risk factor for attempted suicide, even after controlling for other factors (Grossman et al., 1991; Sidhartha et al., 2002). We found running away from school to be a risk factor (Sidhartha et al., 2002).
- b) **Suicide clusters** : They are defined as the occurrence in time and geographical space of an aggregation of suicides (usually 3 or more) which is greater than the number of suicides which would be expected on the basis of statistical prediction. The incidence of clusters

of suicide is thought to be rare (approximately 5% of all youth suicides) (Gould et al., 1990). The extent of clustering, involving suicide attempts, has not been explored.

- c) **Media influences** : It has been suggested that media publicity about suicide issues, whether in the form of fiction, documentary or news reports, may provoke suicidal behavior among those individuals vulnerable to such behaviour (Gould et al., 1986). The studies have correlational design; direct evidence, linking media coverage of suicide to increased suicidal behaviours, is still lacking.
- d) **Access to methods of self-destruction** : Self-poisoning is overwhelmingly the most common method for serious suicide attempt with non-fatal outcome (Moscicki, 1997). Availability of over-the-counter drugs makes self-poisoning an obvious choice for suicide attempters. Presence of insecticides at home also provides easy opportunity. Though restricting access to methods of suicide is proposed as a method of reducing suicide rates, how much it would influence the prevalence NFSB is not clear.
- e) **Life event** : Fergusson et al. (2000), in their longitudinal study, found that adverse life events made an independent contribution even when family, personality, mental health factors were controlled.

Comparison of risk factors in Indian & international studies:

In India, several risk factors for NFSB in adolescents have been reported which have not been reported in Western studies. We conducted a study on school-going adolescents, and, after subjecting 41 identified variables to Logistic Regression Analysis, found female sex, Hindu religion, physical abuse by parents, feeling neglected by parents, history of running away from school, suicide by a friend, death wish, and history of DSH to be risk factors for suicidal ideation and/or attempt (Sidhartha et al., 2002). Kumar et al. studied 74 adolescents with suicide attempt who were brought to a general hospital in Pondichery (Kumar et al., 2000). Male to female ratio was 1:1. 63.5% reported interpersonal problems, and 64.86% had psychiatric disorder. The commonest method of attempt of suicide was organophosphorous poisoning. Alcohol abuse, depression and hopelessness were significant among the adolescents. Other Indian studies reported failure in examination, anticipated punishment, social conflict, neuro-psychiatric

Table 2

INDIAN STUDIES ON NON-FATAL SUICIDAL BEHAVIOURS IN ADOLESCENTS

Authors, Year, Place	Sample	Findings
Kar et al., 1997, Mangalore	22 consecutive suicide attempts, 75% females	High risk: 22% High lethality: 75% Poisoning: 68% Risk factors: failure in exam, anticipated punishment
Jayaramiah et al., 1999, Bangalore	100 consecutive cases with suicide attempt Age: 15-24	Risk factors: social conflict (35%), neuro-psychiatric condition (30%), physical illness (17.5%)
Kar et al., 2000, Cuttack	1000 hospitalised patients Age: <15 Completed suicide: 18 Attempted suicide: 18 DSH: 15	Risk factors: failure in exam, academic pressure, family dysfunction
Kar et al., 2002, Cuttack	86 consecutive attempted suicide Age: 10-20 Girls: 55 Boys: 31	Risk factors: sexual conflict & impending loss of love object (64%)
Kumar et al., 2000, Pondichery	74 adolescents attending a general hospital	M:F = 1:1 63.5% had interpersonal problem 64.86% had psychiatric problem Commonest method: Organophosphorous poisoning alcohol abuse, depression and hopelessness were the risk factors
Sidhartha et al., 2002, Delhi	1205 students from 2 schools Age: 12-18 Boys: 59.6% Girls: 40.4%	Risk factors for SI ^b and/or SA ^a : Hindu religion, female sex, physical abuse, parental neglect, running away from school, suicide by friend, death wish, DSH ^c

a = Suicide attempt; b = Suicidal ideation; c = Deliberate self harm

condition, physical illness, family dysfunction, and impending loss of love object as risk factors (Kar et al., 1997; Jayaramiah et al., 1999; Kar et al., 2000; Kar et al., 2002). Data on Indian studies are summarised in Table 2.

Comparison of risk factors for completed suicides and suicide attempts:

Brent et al. (1994) found attempters less likely than completers to have bipolar affective disorder, a firearm at home, high suicidal intent or combination of mood and non-mood disorders.

Risk factors potential for prevention:

There are several risk factors which can be controlled, shown in Table 3.

Protective factors

There is a dearth of research, which has intended to identify factors protecting against the development of suicidal behaviors in adolescents. Borowsky et al. (2001) studied the protective factors, such as perceived family and parental connectedness, emotional wellbeing, high grades in school, and found that the presence of these 3 factors reduced the risk for suicide attempt by 70 to 85%.

Table 3

RISK FACTORS POTENTIAL FOR SUICIDE PREVENTION

Sociodemographic risk factors: Social disadvantage
Family factors: Dysfunctional family Parental psychopathology
Individual factors: Psychiatric illness Personality problems History pf physical and sexual abuse Medical illness
Environmental & contextual factors: School problems Peer group influence Media influence Access to method of self destruction

Management (AACAP, 2001; Miller et al., 2000)

Suicide intent is often associated with a critical stress event, and is usually contemplated with psychological ambivalence and that arises, in most of the time, in the context of a mental disturbance. The suicidal patient can be understood thus to be undergoing a crisis, and the management would gear to resolve the crisis.

It requires (a) evaluation of the suicidal behavior, (b) determination of risk for repetition of suicide attempt, (c) assessment of the underlying diagnosis, (d) assessment of precipitating and promoting factors.

I. **Assessment** : Clinicians should be aware of which adolescent suicide attempters are at a greater risk for later suicide. These are older (sixteen- to nineteen-year-old) male adolescents; adolescents of either gender, regardless of age, with a current mental disorder or disturbed mental state, such as depression, mania or hypomania, or mixed states, especially when complicated by co-morbid substance abuse, irritability, agitation, or psychosis. Attempters, who have made prior suicide attempts, used a method other than ingestion or superficial cutting, and those who still want to die are also at higher risk.

Assessment information should always be drawn from several sources. It must be realised that assessment is an ongoing process, and intervention should begin as soon as possible. Horowitz et al. (2001) have developed Risk of Suicide Questionnaire (RSQ). It has only four questions: present thoughts of suicide, past thoughts of suicide, prior destructive behavior, and current stressor. It takes less than 2 minutes to complete by non-mental health professionals like, emergency department nurses. An Indian scale, Suicidal Intent Questionnaire (SIQ), consists of ten questions related to expression of suicidal intent (Gupta et al., 1983), is available. It measures the degree of suicide intent in an individual. However, structured or semi-structured suicide questionnaires, whether administered by the clinician or self-completed by the adolescent, have limited predictive value. They may complement, but should never take the place of a thorough assessment, or substitute for any aspect of assessment.

While taking the history, the clinician needs to understand the antecedents of the act, the details of the act itself, and the consequences to the person and his near and dear ones. Clear identification of immediate precipitating factors and motivations for suicide attempt are important. Such motivations can be conscious or unconscious. While doing mental state examination, cognitive aberrations, underlying intent to kill one self, are to be identified

II. **Interventions** : Interventions must encompass the acute management of suicidal behavior as well as treatment of associated mental disorders. Emergency room and other crisis staff should establish a relationship with the

suicidal individual and family, and emphasize the importance of treatment.

The value of “no-suicide contract”, in which the adolescent agrees not to engage in self-harming behavior, and to tell an adult if he or she is having suicidal urge, is not known.

Although there have been no randomized controlled trials to determine whether hospitalising high-risk suicide attempters saves lives, clinicians should be prepared to admit suicide attempters who express a persistent wish to die or who have a clearly abnormal mental state. Inpatient treatment should continue until their mental state has been stabilised, and level of suicidality is reduced substantially.

- a. **Psychotherapy** : Psychotherapy, an important component of treatment for mental disorders associated with suicidal behavior, should be tailored to an adolescent’s particular need. In the beginning, a few sessions of crisis intervention are done in which immediate precipitating factor is dealt with. Once he or she is stabilised, psychotherapy is started. Cognitive-behavioral therapy (CBT), interpersonal therapy (IPT), dialectical behavior therapy (DBT), psychodynamic therapy, and family therapy are all options. Spirito et al. (2002) studied 63 adolescents suicide attempters, and reported supportive psychotherapy techniques were reported by three fourths of the sample, psychodynamic and cognitive techniques by one half of the sample, and behavioral techniques by one third of the sample.
- b. **Psychopharmacotherapy** : Psychopharmacotherapy to treat suicidal behavior should be tailored to an adolescent’s specific needs. Lithium greatly reduces the rate of both suicides and suicide attempts in adults with bipolar disorder. It may be tried in adolescents. Selective serotonin reuptake inhibitors (SSRIs) reduce suicidal ideation and suicide attempts in non-depressed adults with cluster-B personality disorders. Tricyclic antidepressants should not be prescribed for the suicidal child or adolescent as a first line of treatment. They are potentially lethal, because of the small difference between therapeutic and toxic levels of these drugs, and have not been proven effective in adolescents (AACAP, 2001).

Treatment of the psychiatric illness, the patient is suffering, should be initiated. Discharge can be considered if the clinician is satisfied that adequate supervision and support

S. Jena & T. Sidhartha

will be available over the next few days, and if the caregivers have agreed to prevent access to potentially lethal medications. It is valuable for the clinician to warn the adolescent and his parents about the dangerous disinhibiting effects of alcohol and other drugs.

Prevention (USDHHS, 2001; DOH, 2002)

Armed with the knowledge of the characteristics of suicide, a logical procedure is to identify high-risk cases and provide them with optimal treatment and follow-up. Other preventive strategies could include crisis management, or limiting access to potential methods of committing suicide.

General practitioners, paediatricians, school teachers, school counselors, or others should make use of self-completion questionnaire to screen for depression, suicidal preoccupation, and previous suicidal behaviour, in their office. There is ample evidence that teens in mid to late adolescence, the group that is at the greatest risk for suicide attempt and completion, will, if asked directly, reveal this information. Public health measures, such as restricting young people's access to firearms, may result in a short-term reduction in the rates of suicide, but there is no evidence yet that this effect would be lasting. Raising the minimum legal drinking age for young adults appears to reduce the suicide rate in this affected age group.

School-based guidelines : The Louis de la parte Florida Mental Health Institute at the University of Florida developed school-based guidelines for suicide prevention (Doan et al. , 2004). The components of guidelines are as follows.

(i) Gatekeeper training: It consists of training any adult that interacts or observes students to be able to identify any students who may be at risk for suicide, determine the level of risk, know where to refer a potentially atrisk student, how to contact these referral resources, and what school policies are in palce that relate to suicidal crisis situations.

(ii) Educating parents & community members: School should provide information to parents about warning signs, risk factors, protective factors, community resources and what to do following a suicide crisis.

(iii) Student curriculum addressing suicide: suicide curriculum is generally focussed on dispelling myths and increasing correct knowledge about adolescent suicide.

(iv) Teaching adaptive skills: It focuses on educating

students on proper social skills, problem solving strategies, coping skills, and help seeking skills.

(v) Peer support group: These groups can help youths atrisk develop peer relationships ansd more appropriate coping skills, therby reducing feelings of isolation, antisocial behaviour, substance abuse, and other early risk factors while enhancing important protective factors.

(vi) Screening: It is done in two steps: First, all students in the school are screened for at-risk behavior by using screening tools, then at-risk students are directly assessed by trained clinicians within seven days.

(vii) Postvention: It intends to provide timely and proper response to a suicide crisis by an established response team, made up of school staff members and various members of the community.

Life Skill training programme : The components of a Life Skill training program would be self awareness, empathy, interpersonal relations, communications, critical thinking, creative thinking, decision making, problem solving, coping with emotions and coping with stress (Nair, 2004). It may be imparted in suicide prevention programme.

Suicide helplines and crisis intervention centres: There are several suicide helpline centres and crisis intervention centres operating in India, like "Sneha" in Chennai and "Thrani" in Tiruvananthapuram. They provide round-the-clock telephone or in-house counseling to suicidal youths. The focus of intervention is empathetic listening and establishing rapport. It is emphasised that life is precious and there are more challenging way to go about the problem. Available resources and existing support system are identified. Thereafter referrals to appropriate places are made (Arunkumar et al., 2004).

Conclusions

Non-fatal suicidal behaviors, such as suicidal ideation and suicide attempt in adolescents need to be evaluated effectively and managed efficiently, so that suicide rates in this vulnerable population are reduced.

There are very few studies on non-fatal suicidal behaviors in adolescents in India, and there is a great need to conduct such research in this important area.

Professionals, like general practitioners, paediatricians, school teachers, school counselors, need to be trained in

identifying non-fatal suicidal behaviors in adolescents, and know when to refer them to a mental health professional or mental health service for thorough assessment and effective management.

References

AACAP (American Academy of Child and Adolescent Psychiatry) (2001): Practice parameters for the assessment and treatment of adolescents with suicidal behavior. *Journal of American Academy of Child and Adolescent Psychiatry*, 40 (suppl 7), 24S-51S.

Adityanjee, D.R. (1986) Suicide attempts and suicides in India: cross-cultural aspects. *International Journal of Social Psychiatry*, 32 (2), 64-73.

Albeck, P. & Allgaller, C. (1990) Suicide among young men. Psychiatric illness, aberrant behavior and substances abuse. *Acta Psychiatrica Scandinavica*, 81, 565-570.

Andrews, J.A. & Levinsohn, P.M. (1992) Suicidal attempts among older adolescents: prevalence and co-occurrence with psychiatric disorders. *Journal of American Academy of Child and Adolescent Psychiatry*, 31, 655-622.

Arunkumar, T. S. & Vadakekara, E. (2004) Prevention of suicide in a southern state of India (Kerala). [Online] Available: <http://www.thrani.com/pdf/suic.pdf>.

Bagley, C. & Trimblay, P. (1997) Suicidal behaviors in homosexual and bisexual males. *Crisis*, 18, 24-34.

Beautrais, A.L., Joyce, P.R. & Mulder, R.T. (1998) Youth suicide attempts. A social and demographic profile. *Australian & New Zealand Journal of Psychiatry*, 32, 349-357.

Beautrais, A.L., Joyce, P.R. & Mulder, R.T. (1992) Risk factors for serious suicide attempts among youths aged 13 through 24 years. *Journal of American Academy of Child and Adolescent Psychiatry*, 149, 45-51.

Beautrais, A.L. (2000) Risk factors for suicide and attempted suicide among young people. *Australian & New Zealand Journal of Psychiatry*, 34, 420-436.

Boergers, J., Spirito, A. & Dolandson, D. (1998) Reasons for suicide attempts: associations with psychological functioning. *Journal of American Academic of Child and Adolescent Psychiatry*, 37 (12), 1287-93.

Borowsky, I.W., Ireland, M. & Resnick, M.D. (2001) Adolescent suicide attempts: risks and protectors. *Pediatrics*, 107 (3), 486-493.

Brent, D.A., Perper, J.A. & Goldstein, C.E. (1988) Risk factors for adolescent suicide. A comparison of adolescent suicide victims with suicidal inpatients. *Archives of General Psychiatry*, 45, 581-588.

Brent, D.A., Perper, J.A., Mortiz, G., Liotus, L., Balach, L. & Roth, C. (1994) Familial risk factors for adolescent suicide: a case control study. *Acta Psychiatrica Scandinavica*, 89, 52-58.

Brent, D.A., Baugher, M., Bridge, J., Chen, T. & Chiappetta, L. (1999) Age- and sex-related risk factors for adolescent suicide. *Journal of American Academy of Child & Adolescent Psychiatry*, 38(12), 1497-505.

Campbell, R. G. (2004) *Campbell's Psychiatric Dictionary: 8th Edn.*, 60, New York; Oxford University Press.

CDC (Centre for Disease Control and Prevention) (1998) Youth Risk Behaviour Surveillance: United States 1997 (MMWR 1998), SS-3, CDC.

CDC (Centre for Disease Control and Prevention) (2003). YRBSS: Youth Online: comprehensive results. [on-line]. Available: <http://apps.nccd.cdc.gov/yrbss/index.asp>.

Choquet, M. & Menke, H. (1989) Suicidal thoughts during early adolescence: prevalence, associated troubles and help seeking behavior. *Acta Psychiatrica Scandinavica*, 81, 170-177.

Cocarro, E.F., Siever, L.J., Klar, H.M., Maurer, G., Cochrane, K. & Cooper, T.B. (1989) Serotonergic studies in patients with affective and personality disorders. Correlates with suicidal and impulsive aggressive behaviour. *Archives of General Psychiatry*, 46, 587-599.

deWilde, E.J., Keinhorst, C.M.W., Diekstra, R.F.W. & Wolters, W.H.G. (1992) The relationship between adolescent suicidal behaviour and life events on childhood and adolescence. *American Journal of Psychiatry*, 149, 45-51.

Doan, J., Roggenbaum, S & Lazear, K (2004) Youth suicide prevention school-based guide. [Online] Available: http://cfs.fmhi.usf.edu/StateandLocal/suicide_prevention/for_web/IB-5.pdf

DOH (Department of Health) (2002) National Suicide Prevention Strategy for England. Available: <http://www.doh.gov.uk/mentalhealth>.

Fergusson, D.M. & Lynsky, M.T. (1995) Childhood circumstances, adolescent adjustment and suicide attempts in a New Zealand birth cohort. *Journal of American Academic of Child & Adolescent Psychiatry*, 34, 612-622.

Fergusson, D.M., Woodward, L.J. & Hoxwood, L.J. (2000) Risk factors and life processes associated with the onset of suicidal behaviour during adolescence and early adulthood. *Psychological Medicine*, 30, 23-39.

Garnefski, N. & Diekstra, R.F.W. (1997) Child sexual abuse and emotional and behavioural problems in adolescence: gender differences. *Journal of American Academy of Child And Adolescent Psychiatry*, 36, 323-329.

Goodwin, R.D., Beautrais, A.L. & Fergusson, D.M. (2004) Familial transmission of suicidal ideation and suicide attempts: evidence from a general population sample. *Psychiatry Research*, 126 (2), 159-165.

Gould, M.S. & Shaffer, D. (1986) The impact of suicide in television movies. *New England Journal of Medicine*, 315, 690-694.

Gould, M.S., Wallenstein, S. & Kleimann (1990) Time space clustering of teenage suicide. *American Journal of Epidemiology*, 131, 71-78.

Grossman, D.C., Milligan, C. & Deyo, R.A. (1991) Risk factors for suicide attempts among Navajo adolescents. *American Journal of Public Health*, 81, 870-874.

Gupta, S.C., Anand, R. & Trivedi, J.K. (1983) Development of a suicidal intent questionnaire. *Indian Journal Psychiatry*, 25 (1), 57-62.

Harkavy-Freidman, J.M., Asnis, G.M., Boeck, M. & Defiore, J. (1987) Prevalence of specific suicidal behaviors in a high school sample. *American Journal of Psychiatry*, 144, 1203-1206.

Hawton, K., O'Grady, J., Osborn, M. & Cole, D. (1982) Adolescents who take overdoses: their characteristics, problems and contacts with helping agencies. *British Journal of Psychiatry*, 140, 178: 38-43.

Hawton, K., Fagg, J. & Platt S. (1993) Factors associated with suicide after parasuicide in young people. *British Medical Journal*, 306, 1641-1644.

Horowitz, L.M., Philip, S.W. & Gerald, P.K. (2001) Detecting suicide risk in a pediatric emergency department: development of a brief screening tool. *Pediatrics*, 107 (5), 1133-1137.

Ikeda, R.M., Kresnow, M.J., Mercy, J.A., Powell, K.E. & Simon, T.R. (2001) Medical conditions and nearly lethal suicide attempts. *Suicide and Life Threat Behavior*, 32 (1 suppl), 60-7.

Jayaramiah, C., Gunde, R. & Reddy, V. (1999) Attempted suicide among young. Paper presented at the 49th Annual National Conference of the Indian Psychiatric Society.

Joffe, R.T., Offord, D.R. & Boyle, M.H. (1988) Ontario child health study. Suicidal behaviour in youth age 12-16 years. *American Journal of Psychiatry*, 145, 1420-1428.

Kar, N.M. & Choudhury, P. (1997) Characteristics of suicidal behaviour by adolescents. Paper presented at the 49th Annual National Conference of the Indian Psychiatric Society.

S. Jena & T. Sidhartha

- Kar, N.M., Swain, A.K., Naik, M.S. & Dash, P.S. (2000) Suicide and attempted suicide in children and adolescents - some observations. Paper presented at the 52nd Annual National Conference of the Indian Psychiatric Society.
- Kar, N.M., Pursty, G.S., Mohapatra, B.N., Swain, A.K. & Pattnaik, P. (2002) Suicide attempts in adolescents- affective and cognitive predictors of precipitation. Paper presented at the 54th Annual National Conference of the Indian Psychiatric Society.
- Kienhorst, C.W.M., de Wilde, E.J., Van Den Bout, J., Diekstra, R.F.W. & Wolters, W.H.G. (1990) Characteristics of suicide attempters in a population based sample of Dutch adolescents. *British Journal of Psychiatry*, 156, 243-248.
- Kumar, C.T.S., & Chandrasekharan, R. (2000) A study of psychosocial and clinical factors associated with adolescent suicide attempts. *Indian Journal of Psychiatry*, 42 (3), 237-242.
- Lewinsohn, P.M., Rhode, P. & Seeley, J.R. (1994) Psychosocial risk factors for future adolescent suicide attempts. *Journal of Consulting Clinical Psychology*, 62 (2), 297-305.
- Miller, L.A. & Glinski, J. (2000) Youth suicidal behavior: assessment and intervention. *Journal of Clinical Psychology*, 56 (9), 1131-1152.
- Moscicki, E.K. (1997) Identification of suicide risk factors using epidemiological studies. *Psychiatric Clinics of North America*, 20, 499-517.
- Nair, M. K. C. (2004) Adolescent sexual & reproductive health: editorial. *Indian Pediatrics*, 41, 7-13.
- O'Carroll, P.W., Berman, A.L. & Maris, R.W. (1996) Beyond the tower of Babel. A nomenclature for suicidology. *Suicide and Life Threat Behavior*, 26, 237-252.
- Patton, G.C., Harris, R., Carlin, J.B., Hibbert, M.E., Coffey, C. & Schwartz, M. (1997) Adolescent suicidal behaviors: a population based study of risk. *Psychological Medicine*, 27, 715-724.
- Roy, A., Segal, N.L., Centerwall, B.S. & Robinette, C.D. (1991) Suicide in twins. *Archives of General Psychiatry*, 48, 29-32.
- Russel, S.T. & Joyner, K. (2001) Adolescent sexual orientation and suicide risk: evidence from a national study. *American Journal of Public Health*, 91 (8), 1276-1281.
- Schweitzer, R., Klayrich, M. & Melean, J. (1995) Suicidal ideation and behaviours among university students. *Australia and New Zealand Journal of Psychiatry*, 29, 473-479.
- Sidhartha, T. & Jena, S. (2002) Prevalence of non-fatal suicidal behaviours and their association with socio-demographic variables in a school-going adolescent population. Thesis submitted to University of Delhi (unpublished).
- Spirito, A, Stanton, C, Donaldson, D, & Boergers, J. (2002) Treatment-as-usual for adolescent suicide attempters: implications for the choice of comparison groups in psychotherapy research. *Journal of Clinical Child & Adolescent Psychology*, 31(1),41-47.
- Tenant, C. (1998) Parental loss in childhood. Its effects in adult life. *Archiv General Psychiatry*, 45, 1045-1050.
- USDHHS (U.S. Department of Health and Human Services) (2001) National Strategy for Suicide Prevention. Goals and objectives for action. [Online] Available: <http://www.mentalhealth.org/suicideprevention>.
- Westermeyer, J.F., Harrow, M. & Maringo, J. (1991) Risk for suicide or schizophrenia and other psychotic and now psychotic disorders. *Journal of Nervous & Mental Disorders*, 179, 259-266.
- Wichstrom, L. (2000) Predictors of adolescent suicide attempts: a nationally representative longitudinal study of Norwegian adolescents. *Journal of American Academy of Child and Adolescent Psychiatry*, 39 (5), 603-610.