EVALUATION OF SUICIDAL DEATHS AMONG ADOLESCENTS

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ABSTRACT

BACKGROUND

Adolescent suicides in India have become an alarming problem, especially among students. Severe competition and fierce expectation from the parents, teachers, family and friends, access to internet, use of mobile phones, televisions, substance abuse and westernization not only create enormous stress but also divert these young people towards practices like suicides**.** We wanted to categories suicidal deaths among individuals aged 10 to 19 years based on the history and relevant post-mortem findings and enumerate the methods adopted to commit suicide and to identify the common reasons and circumstances that could have led these adolescents to commit suicide.

METHODS

A cross sectional study including 55 adolescents who committed suicide was conducted. History and post-mortem findings were documented during autopsy.

RESULTS

More number of suicidal deaths were among older adolescents. Female suicidal deaths were more than males. Majority of adolescents committed suicide at their homes. Hanging was the adopted method to commit suicide in majority of cases. Problems related to love affair was the most common reason behind the suicides.

CONCLUSIONS

This study found out common reasons and circumstances that have led the adolescents to commit suicide. There is an urgent need for co-ordinated and intensified global action to prevent adolescent suicides.

KEYWORDS

Suicide, Adolescent, Autopsy, Adolescent Love Affair

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BACKGROUND

The World Health Organization defines adolescents as people from 10 to 19 years of age. Adolescence is the transitional phase of growth and development between childhood and adulthood. A myriad of biological changes occur during puberty including increase in height, weight, skeletal mass, sexual maturation and changes in body composition. Besides the bodily maturation process, there will also be movement towards social and economic independence, development of identity, acquisition of skills to carry out the adult relationships and roles and the capacity for abstract reasoning.[1] But adolescence now-a-days is no longer a joyful experience. Adolescent suicides in India have become an alarming problem, especially among students. Severe competition and fierce expectation from the parents, teachers, family and friends, access to internet, use of mobile phones, televisions, substance abuse and westernization not only create enormous stress but also divert these young people towards practices like suicides. In a study which evaluated the cause of death among those aged 10 to 19 years in a rural population of 1,08,000 in South India, suicide accounted for 25% of all death in males and 50% to 75% of all deaths in females.[2] The average suicide rate for boys was 58 per 1,00,000 and for girls, 148 per 1,00,000. There is an urgent need for co-ordinated and intensified global action to prevent adolescent suicides as there are family and friends whose lives are devastated emotionally, socially and economically. This study is to suggest a few suicide prevention strategies, which include, emergency medical management, pharmacological management of psychiatric illness such as depression and specific psychotherapies of suicide attempters, restricting the access to the means of suicide, responsible media reporting and training of health care professionals in reporting and managing suicide attempters.

We wanted to categories suicidal deaths among individuals aged 10 to 19 years based on the history and relevant post-mortem findings and enumerate the methods adopted to commit suicide and to identify the common reasons and circumstances that could have led these adolescents to commit suicide.

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METHODS

This is a Cross sectional study conducted at Department of Forensic Medicine, Government Medical College, Kozhikode during 1st June 2017 to 31st May 2018 (one year).

Inclusion Criteria

- All dead bodies, in the age group between 10 to 19 years, of both sexes with history and the post-mortem findings being consistent with suicide.
- A dead body on which the autopsy is conducted with history of death following some natural diseases, accident, homicide and any other undetermined cause or manner, which later turning out to be suicide after post-mortem examination.
- Relatives who give consent to reveal the reliable reasons behind the deceased's death.

Exclusion Criteria

- Dead bodies received with history of suicide, which on post-mortem examination turning out to be any manner of death other than suicide.
- All identified and unclaimed dead bodies, with history and post-mortem findings consistent with suicide, but no bystanders or relatives to give a reliable history.

RESULTS

55 cases (which satisfy inclusion and exclusion criteria) were studied. Data were analysed using SPSS- 18 software.

Age

Maximum number of suicides seen in adolescents aged 17 years (18 out of 55 cases accounting for 32.7%). Minimum number of suicides was seen in adolescents aged 12 years, accounting for 1.8% (1 out of 55 cases). 2 suicidal deaths were seen in adolescents aged 13 years, accounting for 3.6% of suicides. 3 suicidal deaths were seen in adolescents aged 14 years, accounting for 5.5%, 4 suicidal deaths were seen in adolescents aged 15 years, accounting for 7.3%. 6 suicidal deaths were seen in adolescents aged 16 years, accounting for 10.9%. 10 suicidal deaths were seen in adolescents aged 18 years, accounting for 18.2%. 11 suicidal deaths were seen in adolescents aged 19 years, accounting for 20.0%.

Age in Years	Number of Suicidal Deaths	Percent
12	1	1.8
13	2	3.6
14	3	5.5
15	4	7.3
16	6	10.9
17	18	32.7
18	10	18.2
19	11	20.0
Total	55	100.0

Table 1. Age

Sex

Maximum number of suicidal deaths seen among female adolescents. 41 out of 55 suicidal deaths were females accounting for 74.5%. Number of suicidal deaths among males was 14, accounting for 25.5%.

Sex	Number of Suicidal Deaths	Percent
Male	14	25.5
Female	41	74.5
Total	55	100.0

Table 2. Sex

Educational Status

All the suicidal victims were literates. Maximum number of suicide victims were school going adolescents (39 out of 55 cases, accounting for 70.9%), followed by adolescent going to colleges (15 out of 55 cases, accounting for 27.3%). Only 1 out of 55 cases had completed schooling and had not joined college, accounting for 1.8%.

Educational Status	Number of Suicidal Deaths	Percent
School Student	39	70.9
College Student	15	27.3
Completed Schooling	1	1.8
Total	55	100.0

Table 3. Educational Status

Marital Status

Most of the adolescent suicide victims were unmarried (51 out of 55 cases, accounting for 92.7%). 4 out of 55 cases were married adolescent girls, accounting for 7.3%.

Marital Status	Number of Suicidal Deaths	Percent
Single	51	92.7
Married	4	7.3
Total	55	100.0

Table 4. Marital Status

Time of Suicide

Maximum number of suicide attempts were seen in the evening (from 06.01 pm to 12.00 am), mostly after the school and college working hours (19 out of 55 suicide attempts, accounting for 34.5%), followed by afternoon from 12.01 pm to 06.00 pm (18 out of 55 cases, accounting for 32.7%. 13 out of 55 cases accounting for 23.6% attempted suicide in the morning from 06.01 am to 12.00 am, accounting for 23.6%. 2 out 55 cases, accounting for 3.6% had attempted suicide in the early morning from 12.01 am to 06.00 AM. The time of suicide attempt was unknown in 3 out of 55 cases, accounting for 5.5%.

Time	Number of Suicidal Deaths	Percent
12.00 am to 06.00 am	2	3.6
06.01 am to 12.00 noon	13	23.6
12.01 pm to 06.00 pm	18	32.7
06.01 pm to 12.00	19	34.5
Unknown	3	5.5
Total	55	100.0

Table 5. Time of Suicide Attempt

Place of Suicide

Maximum number of adolescents committed suicide at their residence (49 out of 55 cases, accounting for 89.1%). 4 adolescent married females committed suicide at their husband's residence, accounting for 7.3%. 1 adolescent male consumed rat poison in a train while travelling

(accounting for 1.8%). 1 adolescent female committed suicide at a hostel, (accounting for 1.8%).

Place of Suicide	Number of Suicidal Deaths	Percent
Home	49	89.1
Hostel	1	1.8
Train	1	1.8
Spouse's residence	4	7.3
Total	55	100.0

Table 6. Place of Suicide Attempt

Methods Adopted to Commit Suicide

Most commonly adopted method for committing suicide was hanging. 36 out of 55 cases committed suicide by hanging, accounting for 65.5%., followed by poisoning; 11 out of 55 cases committed suicide by poisoning, accounting for 20.0% of suicides. Out of the 11 poisoning cases, 5 victims died due to poisoning by ingestion of rat poison, 4 died due to ingestion of organ phosphorous compound poisoning, 1 victim died due to corrosive acid (formic acid) poisoning and 1 victim died due to Carbamate (Carbofuran) poisoning. Third leading cause of death was burning by self. 6 adolescents burnt themselves after kerosene, accounting for 10.9% of suicides. 2 adolescent females committed suicide by jumping into water, 1 of them into a well and the other into a river (drowning).

Methods Adopted	Number of Suicidal Deaths	Percent
Hanging	36	65.5
Drowning	2	3.6
Poisoning	11	20.0
Burns	6	10.9
Total	55	100.0

Table 7. Methods Adopted to Commit Suicide

Issues related to love affair was the most commonly seen reason behind suicide, accounting for 32.7% of all suicides (18 out of 55 cases), followed by academic failure, accounting for 18.2% (10 out 55 cases). The third commonly seen reason was - forced by parents to do something, accounting for 10.9% (6 out of 55 cases). All of these cases committed suicide as a result of sudden impulsivity. The fourth reason was problems related to marital life, accounting for 7.3% of suicides (4 out of 55 cases). Psychiatric illness was seen in 3 out of 55 cases accounting for 5.5% of suicides. 3 out of 55 cases accounting for 5.5% of suicides, committed suicide out of an impulsive act following denial of something by the parents. All 3 were denied of using mobile phones. 2 out of 55 cases, accounting for 3.6% had significant physical illness. Financial burden was the main reason behind an adolescent girl's suicide (1 out of 55 cases, accounting for 1.8%) as his father could not afford her school fee. An adolescent male committed suicide as he was beaten by his elder brother in a public place (1 out of 55 cases accounting for 1.8%). According to one of his relatives, he was short tempered. Exact reasons behind 7 out of 55 cases accounting for 12.7% of suicides were unknown.

DISCUSSION

In this cross-sectional study, along with the autopsy findings Informants of 55 cases (which satisfy inclusion and exclusion criteria), were interviewed with the help of a semi-structured self-made questionnaire regarding the suicidal deaths among adolescents and pattern of life events preceding their deaths. The findings are discussed as follows-

Age

Maximum number of suicides seen in adolescents aged 17 years, accounting for 32.7% (18 out of 55 belonged to age group 17 years). Minimum number of cases seen in adolescents aged 12 years, accounting for 1.8% (1 out of 55 cases). This finding is similar to previous studies conducted in Bangalore,[3] where more number of suicides were seen in the age group of 15 to 18 years.

Sex

Suicidal deaths among females were more than males. 41 out of 55 suicidal deaths were females accounting for 74.5%. Number of suicidal deaths among males was 14, accounting for 25.5%. This finding is similar to previous studies conducted in Bangalore, suicides among female children are more than females.[4]

Educational Status

All adolescents who committed suicide were literates. Maximum number of suicide victims were school going adolescents (39 out of 55 cases, accounting for 70.9%), followed by adolescent going to colleges (15 out of 55 cases, accounting for 27.3%). Only 1 out of 55 cases had completed schooling and had not joined college, accounting for 1.8%. Previous studies state that the evidence for the association of education and suicide is also inconsistent. In one Indian study, individuals who were illiterates or less educated were at significantly higher risk of suicide. It also showed that most of the adolescents who commit suicide were school going children belonging to lower socioeconomic status.[5]

Marital Status

Most of the adolescent suicide victims were unmarried (51 out of 55 cases, accounting for 92.7%). 4 out of 55 cases were married adolescent girls, accounting for 7.3%. A previous study states that more number of children who committed suicide were unmarried. In a case series of suicidal deaths at South Delhi, being married put women, particularly those under the age of 30 years at a higher risk of suicide.[6] In the Holmes-Rahe Life Inventory- The Social Readjustment scale for estimating stress induced health problems, marriage is given a score of 50, death of a spouse carries a score of 100, divorce carries a score of 73 and marital separation is given a score of 65.[7]

Maximum number of suicide attempts were seen in the evening (from 06.01 pm to 12.00 am), mostly after the school and college working hours (19 out of 55 suicide attempts, accounting for 34.5%), followed by afternoon from 12.01 pm to 06.00 pm (18 out of 55 cases, accounting for 32.7%. This is similar to a previous study, which states, majority of the young people who attempt suicide were females 68 (81.6%), who attempted suicide between

evening and midnight.[8] In this study, 13 out of 55 cases accounting for 23.6% attempted suicide in the morning from 06.01 am to 12.00 am. 2 out 55 cases, accounting for 3.6% had attempted suicide in the early morning from 12.01 am to 06.00am. The time of suicide attempt was unknown in 3 out of 55 cases, accounting for 5.5%. However, a study conducted at Turkey states, different subpopulations die by suicide at different times of the day and days of the week. Time patterns of suicide varied considerably over time, suggesting that they cannot be explained by biological rhythm alone. In that study, large number of young and middle-aged people commit suicide more around midnight.[9]

Maximum number of adolescents committed suicide at their residence (49 out of 55 cases, accounting for 89.1%), which is similar to a study conducted at Bangalore, which stated majority of the children who committed suicide were at their homes. And in this study, 4 adolescent married females committed suicide at their husband's residence, accounting for 7.3%. 1 adolescent male consumed rat poison in a train while travelling (accounting for 1.8%). 1 adolescent female committed suicide at a hostel, (accounting for 1.8%).

Methods Adopted to Commit Suicide

Most commonly adopted method for committing suicide was hanging. 36 out of 55 adolescents committed suicide by hanging, accounting for 65.5%, followed by poisoning (11 out of 55 cases, accounting for 20.0% of suicides). Out of the 11 poisoning cases, 5 victims died due to poisoning by ingestion of rat poison, 4 died due to ingestion of Organophosphorous compound poisoning, 1 victim died due to corrosive acid (formic acid) poisoning and 1 victim died due to carbamate (furadan) poisoning. Third leading cause of death was burning by self. 6 adolescents burnt themselves with kerosene, accounting for 10.9% of suicides. 2 adolescent females committed suicide by jumping into water, 1 of them into a well and the other into a river (drowning). The findings in this study are more or less similar to a previous study conducted at Bangalore, India, which states hanging was the most common method adopted to commit suicide (82.05%). In a study conducted in New Delhi, hanging was the commonest method used (57% in girls and 49.5% in boys), followed by poisoning (34.7% in boys and 49.5% in girls). A study of intentional self-harm among adolescents in tertiary hospital suggests that the most common method tried is consumption of insecticides (65%).[10]

Restricting Access to Means

Restricting the access to the means of suicide such as pesticides, firearms, heights, railway tracks, poisons, licit and illicit drugs, sources of carbon monoxide such as car exhaust or charcoal, etc., will be effective in preventing particularly, the impulsive suicides.[11]

Reasons Behind Suicide

Problems related to love affair was the most commonly seen reason behind suicide, accounting for 32.9% of all suicides (18 out of 55 cases), followed by academic failure, accounting for 18.2% (10 out 55 cases). The third commonly seen reason was "forced by parents to do something", accounting for 10.9% (6 out of 55 cases); Among these, 2 adolescents committed suicide because their mothers forced them to do household works such as cooking and cleaning. 2 adolescents were forced by their parents to switch off the television and go back to do their school homework; one of them was forced by the parents to join a school hostel and the other 1 was forced by the parents to join government school since they cannot afford this adolescent, a private school. These adolescents committed suicide as a result of sudden impulsivity. The fourth reason was problems related to marital life, accounting for 7.3% of suicides (4 out of 55 cases). 2 of them were blamed and scolded for not getting pregnant even after some months of marriage. 1 of them was stressed and could not take up a new life in a new home, even though their in-laws and spouses were not the reasons for them to commit suicide. Another adolescent married female was a known case of depression on irregular treatment and she had expressed a feeling of hopelessness and suicidal ideation to mother. Psychiatric illness was seen in 3 out of 55 cases accounting for 5.5% of suicides. All three were diagnosed depression and 1 of them was not under regular treatment, while the other 2 were under regular treatment. 3 out of 55 cases accounting for 5.5% of suicides, committed suicide out of an impulsive act following denial of using mobile phones by their parents. 2 out of 55 cases, accounting for 3.6% had significant physical illness. One of them was a male having Congenital Talipes Equino Varus (CTEV) and the other one was a female having a bleeding disorder (Von Willebrand's disease). Both of them had thought that they were a burden to their parents since they have spent so much of money for their treatment. Financial burden was the main reason behind an adolescent girl's suicide (1 out of 55 cases, accounting for 1.8%) as his father could not afford her school fee. An adolescent male committed suicide as he was beaten by his elder brother in a public place (1 out of 55 cases accounting for 1.8%).

Reasons	Number of Suicidal Deaths	Percent
• Academic failure	10	18.2
• Problems regarding love affair	18	32.7
• Problems in marital Life	4	7.3
• Forced by parents to do something	6	10.9
• Physical Illness	2	3.6
• Psychiatric illness	3	5.5
• Financial Burden	1	1.8
• Unknown	7	12.7
• Scolded or beaten by family members	1	1.8
• Parents denying something	3	5.5
• Total	55	100.0

Table 8. Reasons for Committing Suicide

According to one of his relatives, he was short tempered. Exact reasons behind 7 out of 55 cases accounting for 12.7% of suicides were unknown. However, in previous study conducted at Bangalore (40), academic failure (41.02%) was noted as the most common reason behind adolescent suicides. Others include love failure

(20.51%), poverty (12.825%), harassment (10.25%), argument (2.56%). Certain factors like parental fights, beating at home and inability to cope up studies were found be significantly (P value>0.05) associated with suicidal attempt.

CONCLUSIONS

The main purpose of this study is to find out the stressors that could have led these adolescents to commit suicide and to suggest a few strategies to prevent the suicides in the future. Inappropriate media reporting practices can sensationalize and glamourize suicides and increase the risk of copycat suicides (imitation of suicides) among vulnerable people. Responsible reporting by media includes, avoiding detailed description of suicidal acts, avoiding sensationalization and glamorization, using responsible language, minimizing the prominence and duration of suicide reports, avoiding oversimplifications, educating the public about the suicide and available treatments, and providing information as to where they can seek help. The development of integrated suicide prevention strategies, which function at the individual, family, community and social levels is the key to design appropriate suicide prevention programmes for the most vulnerable population such as adolescents.

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