RESEARCH

Pattern of Suicide Attempts in Southern Nepal: A Multi-Centered Retrospective Study

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ABSTRACT

Background: Suicide has become a major public health issue in low income underdeveloped countries like Nepal. In Nepal, suicide research based on General Hospital Psychiatry Unit (GHPU) settings can be informative to explore the trend in suicidal behaviors. In this study, we aimed to study the pattern of suicide attempts in Southern Nepal by including retrospective suicide attempt cases registered in the three GHPU centers.

Methods: The study included 116 survivors of suicide attempts registered over a period of six months (Jan, 2017 to July, 2017) at three centers in Southern region of Nepal. The cases were referred from medical emergency or other medical departments for psychiatric evaluation. They underwent evaluation by at least one consultant psychiatrist and received appropriate interventions.

Results: Majority of the victims were female (68%), belonging to younger age group (90%) with one third in adolescent age group and homemakers (32%) or students (31%) by occupation. The most common method of attempt was self poisoning with pesticides (78.4%) followed by medication overdose (8.6%) and hanging (7.8%). Most of the attempts (82.7%) were impulsive in nature. Mental illness was diagnosed in 60 % of the cases, mainly depressive disorder, and adjustment disorder. Most of the attempts (87%) were triggered by psycho-social factors before the attempt, mainly interpersonal conflicts.

Conclusions: The pattern shows predominance of female gender, younger age group, a role of mental illness, impulsivity and psychosocial factors in suicide attempts. Future research should focus on these aspects to develop effective prevention strategies.

Keywords: Psyco-social, Suicide, Southern Nepal, Self Poisoning

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INTRODUCTION

Suicide has become a serious public health problem globally contributing to around 800000 deaths every year. Data show that for each adult who died of suicide, there may have been more than 20 others attempting suicide.[1] The World Health Organization South-East Asia region had age standardized suicide rate of 13.27 per 100000 population in 2015, more than the global average (10.67) and higher than other WHO regions.[2]

Nepal is a South Asian country located between India and China with population of 28.5 million having multi-ethnic background and majority (86%) living in rural areas. It is geographically

divided into the northern Himalayas *(Himal),* the central hilly region *(Pahad)* and the southern plain belt *(Terai)* and each region is inhabited by communities with distinct socio-cultural background. Despite the huge burden of mental illness and treatment gap, delivery of mental health service in Nepal is facing several barriers like low prioritization and funding for mental health by the government, poor public awareness, high stigma and unfavorable psychosocial factors leading to restricted treatment seeking by the affected people, limited number of mental health professionals, mostly practicing in the metropolis, availability of few trained community mental health workers and limited treatment options. [3,4]

Amidst growing coverage in the media, suicide has been considered as the silent or the hidden epidemic.[5] However, Nepal still lacks national level suicide surveillance and prevention programs. This has led to confusion regarding actual rate of suicide and restricted efforts for development of feasible suicide prevention strategies.[6]

A scoping review of literature on self harm and suicide behavior in Nepal found that the victims were predominantly females, belonging to younger age group with prominent role of mental illness and psychosocial stressors.[7]

In Nepal, General Hospital Psychiatry Unit (GHPU) settings play vital role in delivery of mental health services. Individuals with suicide attempts are brought to medical emergency for management, stabilized by medical or surgical departments and referred to Psychiatry department for detail evaluation during admission or discharge. Hence, suicide research based on GHPU settings can be informative to explore the trends in suicidal behaviors. Most of the past studies on suicide attempts in Nepal have done data collection in a single GHPU setting, especially in teaching hospital located either in the capital, big peripheral cities or hilly region of the country. There is scarcity of data from the Southern region of Nepal which is inhabited by population with an entirely different ethnic and socio-cultural background from rest of Nepal. Hence, it is important to understand the pattern of suicide attempts in this population of Nepal to outline specific prevention strategies.

OBJECTIVE

This study aims to explore socio-demographic characteristics, pattern of attempts, psychiatric diagnosis, psychosocial and personality factors among survivors of suicide attempts presenting to General Hospital Psychiatry Unit (GHPU) settings located in the Southern region of Nepal.

METHODOLOGY

Study design and setting: The study had a retrospective design with data collection based on review of clinical records of suicide attempt surviviors evaluated at the department of Psychiatry in three GHPU centres situated in the Southern belt of Nepal. Data collection was done from two private teaching hospitals associated with medical colleges, located at Kohalpur (Banke district) in Mid-Western Nepal and Birganj (Parsa district) in Central Nepal. The third centre was a GHPU of a Governement Zonal hospital located in Butwal (Rupandehi district) of Western Nepal. Each centre had a Psychiatry department with at least one full time practising consultant psychiatrist.

Eligibility criteria: The study sites were chosen purposively.

Following inclusion criteria were used to screen the medical records of registered suicide attempt cases.

1. Identified as suicide attempt cases by medical emergency/other departments and referred to the department of psychiatry for evaluation between 1st January, 2017 to 31st July,2017
2. Complete psychiatric evaluation done by at least one psychiatrist with collateral information from the close family members
3. Registered as suicide attempt/deliberate self harm after psychiatric evaluation

Following cases were excluded from the study.

- Patients who were medically unstable (e.g. in altered sensorium) causing difficulty in detail psychiatric evaulation;
- Absence of reliable informants during evaluation;
- Diagnosed as accidental cases;
- Death during the hospital stay due to medical complications

Study procedure: The clinical registers in the department of Psychiatry in the three centers were retrospectively screened for registered suicide attempt cases during six months period (1st January,2017 to 31st July,2017). The data regarding socio-demographic characteristics of the individuals, details of the attempts, psychiatric diagnosis, psychosocial stressors and personality factors were extracted from the records. The individuals had undergone standard clinical evaluation by at lease one qualified psychiatrist in each centre. The evaluation included recording of the socio-demographic characteristics, detail interview with the victims lasting at least one hour with Psychiatric history taking and Mental Status Examination (MSE) and collateral information from the close family members along with review of the available medical records. After clinical evaulation, the inviduals were diagnosed based on ICD-10 classification of mental and behavioral disorders criteria. They were either admitted or advised follow up in outpatient basis depending upon severity of the attempt, risk of further attempts and their psychiatric diagnosis. All of them received appropriate pharmacological and psychological interventions depending upon their clinical diagnosis.

RESULTS

During the six months period, there were total 116 registered suicide attempt cases who satisfied the eligibility criteria for the study. Detail findings have been summarized under following sections.

Socio-demography: As shown in table 1, most of the victims were females (68.1%) and married (59.5%). There was predominance of younger age group < 35 years of age (55.2%) and 33.6% of the total individuals belonged to adolescent age group (<20 years of age). Regarding ethnicity, 51.8% of the individuals belonged to either indigenous (35.4%) or disadvantaged/religious/ethnic minority groups (16.4%). Around 36.2% of them belonged to communities who had migrated from the hills to the southern plains. Most of the individuals were students (31.03%), homemakers (31.9%) or self employed (20.7%).

Table 1 : Socio-demographic profiles of self harm/suicide attempters in Southern Nepal

Socio-demographic variables	Number of subjects (%)
Gender	
Male	37 (31.9)
Female	79 (68.1)
Age group category (years)	
Early adolescence (<14)	8(6.9)
Late adolescence (14 to 19)	31(26.7)
Young adulthood (20-35)	64(55.2)
Middle/Late adulthood (36-59)	10(8.6)
Geriatric age group (>60)	3(2.6)
Ethnicity	
Upper caste hill region	36(31)
Upper caste plain region	20(17.2)
Indigenous hill region	6(5.2)
Indigenous plain region	35(30.2)
Disadvantaged/ religious/ethnic minority	19(16.4)
Marital status	
Married	69(59.5)
Single	47(40.6)
Occupation	
Students	36(31.03)
Homemakers	37(31.9)
Self-employed	24(20.7)
Agriculture	6(5.2)
Manual laborer	10(8.62)
Unemployed/Retired	3(2.6)

Details of the attempt: The details about suicide attempts have been mentioned in Table 2. Self poisoning with pesticides was the most attempt method (78.4%), mainly with organophosphates. Some individuals (8.6%) had attempted to overdose themselves with prescribed psychotropic medications. Hanging was attempted by 7.8% whereas few had inflicted cut injury upon themselves (4.3%). Most of the cut injuries were self inflicted over throat (n = 3) by individuals under alcohol intoxication or acute psychosis. Two individuals had self-inflicted wrist cut-jury.

Most of the victims had moderate (59.5%) to high intent (35.3%) indicating that they had stronger intent to die. Most of the attempts were impulsive (82.7%) in nature i.e. the decision was taken few hours before the attempt without pre-mediation. Most of them were first attempts (94%) and past attempts were present in only seven individuals. Those who had repeat attempts were either having long term psychosocial stressors (n=3) or psychiatric diagnosis like depressive disorder (n = 2) and personality disorders (n = 2).

Table 2 : Details of the self harm/suicide attempts

Socio-demographic variables	Number of subjects (%)
Method of attempt	
Self poisoning (pesticides/Insecticides)	91(78.4)
Prescribed medication overdose	10(8.6)
Hanging	9(7.8)
Cut injury	5(4.3)
Throat	3
Wrist	2
Drowning	1(0.9)
Intent	
High	41(35.3)
Moderate	69(59.5)
Low	4(3.4)
Couldn't be assessed	2(1.7)
Impulsive attempt	
Yes	96(82.7)
No	20(17.2)
Past history of attempt	
Yes	7(6)
No	109(93.9)

Psychiatric diagnosis: Of all the 116 individuals, 47.9% of the subjects received psychiatric diagnosis based on ICD-10 diagnostic criteria for mental and behavioral disorders, mostly mood disorder (25.8%), mostly first depressive episode. Some of them also met a co-morbid diagnosis of Alcohol dependence syndrome (n = 3). Adjustment disorder was the second most common diagnosis (22.4%). Alcohol dependence syndrome, under intoxication during the attempt was present in eight individuals and Schizophrenia in three individuals. In the individuals with Schizophrenia, two attempts were by self-inflicted cut-injury of throat and the third individual attempted self poisoning, all under the influence of psychotic symptoms. Individuals who were under influence of alcohol also attempted more violent methods like hanging and self-inflicted cut injury of throat.

Psychosocial and personality factors: Majority of the attempts (87.1%) were preceded by at least one psychosocial factor, mainly interpersonal conflicts (72.1%). The most common psychosocial factor was argument with spouse leading to impulsive attempt. Among women, the attempts could be temporally correlated with emotional distress after arguments with their husbands regarding their alcohol use, domestic violence, or husband's alleged second marriage. Surprisingly, even trivial arguments regarding day to day affairs with the spouse, especially among those of indigenous communities e.g. 'Tharu' community. Most of the women who reported psychosocial factors belonged to adolescent age group. Married men under influence of alcohol were also found to impulsively attempt suicide after conflict with their wives. In unmarried adolescents, acute stress due to poor academic performance, perceived rejection or verbal arguments with romantic partner, unfavorable reaction by the family members etc. were the common psychosocial issues.

Personality/temperamental factors were present in 22.4% of the individuals, most of them having at least some features of emotionally unstable disorder (n= 20).Only few met criteria for personality disorders (emotionally unstable: n= 2; mixed personality disorder n=2) or had difficult childhood temperament (n=2).

Table 3 : Diagnosis, psychosocial and personality factors in the suicide attempts

Socio-demographic variables	Number of subjects (%)
Psychiatric diagnosis	
Mood disorder	30(25.8)
Moderate/Severe depressive	25
episode	1
Postpartum depressive episode	1
Bipolar disorder, current episode	3
severe depression	26(22.4)
Depression with alcohol	8(6.9)
dependence syndrome	3(2.6)
Adjustment disorder	49(42.2)
Alcohol dependence syndrome	
(Acute Intoxication)	
Schizophrenia	
No Psychiatry diagnosis	
Psychosocial stressors	
Present	101(87.1)
Interpersonal	84(72.1)
Conflicts with spouse	63
Problems in romantic relationships	7
Conflicts with in-laws	3
Arguments with parents/siblings	11
Academic	14
Financial	3
Not present	15(12.9)
Personality/temperament factors	
Pre-morbid personality/	26(22.4)
temperament 'Not well adjusted'	20
Emotionally unstable features	2
Emotionally unstable personality	2
disorder	2
Mixed Personality disorder	90(77.6)
Difficult Childhood Temperament	
Pre-morbid personality /	
temperament 'well adjusted'	

DISCUSSION

This hospital based multi-centered study from the southern region of Nepal replicates findings from the past studies from Nepal which show that majority of the suicide attempts were done by individuals belonging to younger age group, female gender and are homemakers or students.[8-12]

However, studies which conducted psychological autopsy of complete suicides registered in the police data, have always found more number of males compared to females.[13,14] In our study sample, many individuals belonged to indigenous or disadvantaged/minority communities, and this has also been highlighted in previous studies as well.[10,12] Hence, it will be important to explore vulnerability towards suicide in these specific groups in future studies. In this study, self poisoning with pesticides, (mainly organophosphates) was found to be the most common method of suicide attempts similar to past studies of suicide attempt cases.[8-12] Contrary to this, hanging has been found to be the commonest method of mortality due to suicide in Nepal.[13,14] The discrepancy in the hospital based and police data could be because hanging cases have higher fatality and these individuals are less likely survive to reach the hospitals and are more likely to be reported to the police. On the other hand, self poisoning cases in the remote regions might be under-reported to the police and mistaken for accidental cases. Hence, suicide research with more robust methodology is required in Nepal to clarify these aspects. This study also showed that majority of the suicide attempts (>80%) were impulsive, i.e. without pre-mediation, which was also seen in a previous study from Eastern Nepal.[12] Many of them didn't meet criteria for any psychiatric disorder. Most of the attempts survivors had moderate to highintent to die, similar to past studies in Nepal.[15,16] Thus, it is a big challenge to identify the individuals who are vulnerable to impulsive suicide attempts with strong intent to die.

Psychiatric disorders accounted for 60% of these suicide attempts. Only around fourth of the suicide attempts could be attributed to mood disorder, mainly depression which is lower than in previous studies in Nepal. The next common diagnosis was Adjustment disorder because these individuals presented with a brief period of depressive and anxiety symptoms precipitated by acute psychosocial stress without meeting diagnostic criteria for an episode of mood disorder. The study also showed that some individuals had attempted suicide either under alcohol intoxication in the background of alcohol dependence or co-morbid mood disorder and various psychosocial factors acting proximal to the attempts.

The study has also highlighted the role of several psychosocial factors in triggering suicide attempts. The presence of interpersonal conflicts (mainly in females) like verbal arguments with husbands/romantic partners or family members were common, mainly in adolescents, similar to findings from the past studies.[9,12] In Nepal, maternal mortality and morbidity (MMM) study 2008/2009 found that suicide was the leading cause of death for women of reproductive age (15-49) and 21% of the suicides occurred in women of reproductive age 18 or younger and psychosocial factors like role of interpersonal conflicts with husbands and unhappy marriages largely contributed to the suicides warranting further investigations.[17] A retrospective review of suicide mortality cases of young adults and children, registered in the police records found that only one fourth possibly committed suicide due to mental illness whereas psychosocial factors (e.g. domestic violence, failure in academic achievement or end of romantic relationships) were present in nearly 60% of the cases.[18]

Overall, it can be inferred that the attempts were triggered by contribution of impulsivity and easy access to lethal means in groups with high vulnerability due to either immediately preceding psychosocial factors, distress due to psychiatric disorder and in few, under the influence of alcohol. Despite some important reflections in the overall trend regarding suicidal behavior, there are several limitations in this study. It is a hospital based study having a retrospective design with small sample size and reviews cases registered during the period of only six months. The centers were chosen purposively thus limiting generalization of the results for the whole country. Moreover, we haven't tried to compare the pattern of suicide attempts in survivors vs.

fatal cases in this region. Future studies also need to ascertain the longitudinal outcome of the survivors by following them closely to see trend of repeat attempts and complete suicide. Studies also need to focus on individuals who deliberately inflict self harm without intent to die. A more detailed exploration regarding role of psychosocial issues and personality factors is warranted in Nepalese context. Additionally, qualitative data might be required to further explore associated factors, attitude and stigma towards the survivors. Future studies should also focus on specific population like women, adolescents and the preventive interventional aspects. A national level epidemiological survey with robust methodology like one conducted in India is important to understand the burden of the problem and devise suicide prevention strategies.[19]

Towards suicide prevention strategies

World Health Organization recommends a framework of Public health action for the prevention of suicide. Some of the strategies that have been outlined are identification of the risk factors and protective factors, development, testing and implementation of effective interventions at the general population level and individual level, targeted strategies for vulnerable sub-populations at risk, improving case registration by improving the surveillance system, conducting research with robust methodology and further monitoring and evaluation.[20]

The suicide prevention strategies might differ between low income country like Nepal with low mental health resources compared to the high income countries that have more robust mental health delivery system and resources.[21] Some of the important strategies being routinely practiced in GHPU settings in Nepal to cut down suicide risk at individual level include immediate clinical interventions for the attempt survivors with 24 hour vigilance, lethal means restriction and appropriate treatment of psychiatric illnesses like depression. Besides the acute clinical management, these individuals also need to be regularly followed up for continued aftercare to prevent further attempts and mortality risk due to suicide in future. In Nepal, mental health professionals also need to play a pivotal role to increase awareness in the public about the magnitude of the problem and the availability of effective interventions. One of the most effective suicide prevention strategies found to be effective at national level is implementation of policy to restrict import of toxic pesticides (e.g. organophosphates).[22]

Moreover, suicide prevention strategy also needs to incorporate psychosocial interventions to identify and management psycho-social issues before they become severe and precipitate suicidal behaviors. Specific intervention programs will be needed for groups like young adolescents and students, women, those belonging to indigenous/ minor communities. Overall, a coordinated approach is required for formulation of national level, comprehensive, multi-sectoral suicide prevention strategy to develop and to implement socio-culturally and economically feasible interventions.

CONCLUSION

To sum up, most of the suicide attempts presenting to the GHPUs were by females and belonging to younger age group especially, adolescents. Most of the attempts are by self poisoning, impulsive in nature with moderate to high intent. Besides psychiatric disorders, there seems to be prominent role of impulsivity and acute psychosocial stressors in triggering the suicide attempts. These findings need to be verified with methodologically superior studies to devise effective, economical and socio-culturally feasible suicide prevention strategies for the country.

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