



Review article

Means of Act in Suicide –A Review across the Globe

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ABSTRACT

Background: Suicide stands at fifth major health problem worldwide. The incidence is 10-12/100000 populations per year. The use of means of suicide act variably changing from time to time under influence of available equipment and materials in the vicinities. As for example firearms shot, a deadly means of act is most common among Europeans and Americans but still hangings is a choice in developing countries, charcoal soothing in petrochemical and coal worlds, pesticides is a favorite choice among farmers. The factors compelling act are financial crisis, deficit support systems, poor crisis intervention, procurement and negligent rescues. The present study is to highlight means of act and factors responsible for such brutal acts. **Method:** The applicable methods selected for this study is based on the review of articles available on various website reflected from different geographical area across the world obtained from 45 full texts available on internet, out of which 29 were considered reliable. **Result:** Analysis and review of available data in this study revealed deliberate use of pesticide and another poisoning are commonest act performed by suiciders, following it hanging, jumping, self-harm, laying under train, drowning are other common means of act. Electrocution, Road traffic accidents, alcohol misuse or overuse and immolation are occasional and ineffective means of act tried by suiciders. **Conclusion:** The associated factors related to suicide were also analyzed had showed economic downfall, agrarian crisis, social disgrace including parental separation, number of family members, friends and their burden and lack of support are an integral part of suicide factors.

KEYWORDS: suicide, means of act, suicide factors, research articles.

INTRODUCTION

Suicide is derivation of a Latin word which means- "self-murder." A person's great retreat from life, when an individual person is no longer able to endure suffering in the present or pain in future it leads to failure of adaptation and permanent regression from reality. Suicide can be defined as self-inflicted death with explicit or implicit evidence that the person intended to die. Suicide is major health problem across the world which is representing in most common reasons of death [1].

To prevent suicide it very important to know about means of choice victims choose [2]. There should be effective intervention strategy for suicide prevention, which is an important public health strategy. In these strategies restriction to access to suicidal means is an effective strategy of suicide completion [3].

MATERIALS AND METHODS

PubMed, PsycINFO, Google Scholar, ProQuest and IndMED were searched using appropriate search terms. The abstracts of relevant papers were independently examined by both authors for possible inclusion. A standardized set of data items were abstracted from the full text of the selected papers. The applicable methods selected for this study is based on the review of suicide articles available on various website reflected from different geographical area across the world obtained from 50 full texts available on ProQuest, out of which 29 were considered reliable. It excluded those articles which do not have appropriate data from randomly selected 50 articles.

RESULTS

Table:1 various internet articles related to suicide means and factors

Author	TOPIC	JOURNAL	VOLUME	AIMS OBJECTIVES &	SAMPLE SIZE	METHOD	MEANS of act	CONCLUSION	FACTORS
FARHAD, BASHIR, JAMAL, ARA ET AL[4]	Deliberate self-poisoning at National Poisoning control Centre	Uni Med Health Sci	2014 Jan;13:3-8.	Identify Risk Factors of deliberate self-harm	374	Use of tools WHO, IPCS, INTOX	Deliberate use of pesticides	Deliberate self-Poisoning common in male youth in Pakistan	NA
RITU MODI, ABHA SINGH[5]	Suicide Prevention & Treatment	Web Portal of Humanity & Social Science research	Vol. 3 Issue 2. 15 th July 2012	NA	NA	NA	Vague	Directed to leading & implementing National Policy	NA

AUTHORY BATEMANN[6]	A RCT of Mentalization based technique	BMC Psychiatry	2016 Dec;16(1):304	Efficacy of mentalization-based treatment in Anti-Social Personality Disorder	NA	Treatment response of MBT	NA	MBT effective for ASPD	NA
JHAS, PARAJULI SR[7]	Suicide by Self-inflicted stab wound	Journal of College of Medical Science, Nepal	Vol. 10, 2014 No.2	NA	Case Study	NA	Stabbing	Inefficient immediate help even on hospitalization	NA
SRIJIT MISHRA, SANGEETA SHROFF et al[8]	Suicide of Farmers in Maharashtra	Submitted to government of Maharashtra	2005-2006	-	192 News320 cases of suicide	Analysis of news reports	Pesticides 76% Hanging 16.7% Drowning 3.5% Immolation 2.9% Laying under the train 0.1%	-	Economic downfall, Agrarian crisis, Social disgrace
SALAH AL WAHIB, NADIA AL KANDARY[9]	Patterns of suicide in Kuwait – A retrospective descriptive study 2003-09	BMC public health	2015 Dec;15(1):302	NA	347	General dept. of Criminal Evidence Full review of Case data	Hanging	Govt. of Kuwait investigated dire conditions, Strict firearm control & Control of certain medicines	NA
K HAWTON, A CLEMENTS, C SAKAROVITCH[10]	Suicide in doctors – A study of risk according to gender, seniority & specialty in medical practice	Journal of Epidemiology & Community Health	2001 May 1;55(5):296-300	Investigate suicide risk of doctors in England & wales	223	Retrospective cohort study	NA	The excess risk of suicide in female doctors highlights the need to tackle stress and mental health problems in doctors more effectively	NA

JG, FIEDOROWI CZEON, A C LEON ET AL[11]	Do risk factors of suicide behavior differ by affective disorder polarity	Psychological medicine	2009 May;39(5):76 3-71	The influence of affective disorder polarity on subsequent suicide attempts or completions	909	Participants with Major affective disorder followed prospectively for up to 25 years in the National Institute of Mental Health	NA	Bipolarity does not independently alter the influence of well-established suicidal risk factors	Affective disorders
AJIT SHAH[12]	The relationship between Suicide Rates and Age – An analysis of Multi-national Data	International Psychogeriatrics	2007 Dec;19(6):11 41-52	To examine the relationship between suicide rates and age	NA	Suicide rates in both sexes in 7 age bands in 62 countries	NA	Inconclusive study	Region specific age bands
JIA LI, MAO-SHENG RAN ET AL[13]	In-patient suicide in a Chinese psychiatric hospital	Suicide and life-threatening behavior	2008 Aug;38(4):44 9-55	To identify risk factors of suicide in Psychiatric in-patients	57,835	Study group was recruited from in-patients and in-patients who died of suicide	Hanging, drowning, jumping from height, self-poisoning	Suicide in 133.1/1,00,000 admissions. No significant difference in male and female population.	Schizophrenia, marriage
STEFAN FRUEHWALD, PATRICK FROTTIER ET AL[14]	Prison suicides in Austria	Suicide and Life-threatening Behavior	2000 Dec;30(4):36 0-9	Evaluating all suicides occurred in Austrian prisons between 1975-97	220	Utilizing official statistical data from the Ministry of Justice	Hanging, cutting arteries, poisoning, jumping, electrocution, shooting, burning	Length of sentence affects suicide and it is region specific	Length of sentence served
ROBIN E GEARING, DANA LIZARDI ET AL[15]	Religion and Suicide	Journal of religion and health	2009 Sep 1;48(3):332- 41	Influence of religion on Suicidality	NA	PsycINFO and MEDLINE databases used to search for published articles	NA	Greater religiosity predicts decreased risk of suicidal behavior	Religiosity

						between 1980-2008			
XIANCHEN LIU, JENNYUN TEIN ET AL[16]	Psycho-pathology associated with Suicide attempts among rural adolescents of China	Suicide and life-threatening behavior	2005 Jun 1;35(3):265-76.	Relationship between psycho-pathological profiles and self-reported suicide attempts	1365	Questionnaire applied to report previous suicide attempt(s)	NA	73% of all suicide attempters had at least one behavioral emotional syndrome	Psycho-pathology
KEVIN M MALONE, STEVEN P ELLIS ET AL[17]	Platelet 5-HT2A receptor sub-responsivity and lethality of attempted suicide in depressed in-patients	International Journal of Neuro-psychopharmacology	2007, 10, 335-343	Role of serotonin system in the etiology of suicidal behavior	-	Patients admitted for evaluation and treatment of Major depression recruited from IPD of the university teaching hospital	NA	High lethality suicide attempters were older and less impulsive and tended to be more depressed than low lethality attempters. 5-HT2A receptor responsivity is significantly blunted in patients with major depression who have made high lethality suicide attempts.	5-HT2A receptor responsivity
AYAL SCHAFFER, ALASTAIR J ET AL[18]	Correlates of suicidality among patients with psychotic depression	Suicide and Life-Threatening Behavior	Aug;38(4):403-14	Independent association of age and other factors with suicidality in patients with major depression with psychotic features	183	STOP-PD trial, DSM IV TR criteria, SCID, HDRS, CIRS-G, MMSE	NA	59.6% reported current suicidal ideation or attempt during the depressive episode	Psychotic depression

THOMAS REISCH, URSULA SCHUSTER[19]	Suicide by jumping & Accessibility of bridges : Results from a National Survey in Switzerland	Suicide and Life-Threatening Behavior	2007 Dec;37(6):68 1-7	To compare suicide data from regions with and without suicide bridges and to estimate the effects on method and site substitution if bridges were to be secured	NA	Data sets analyzed obtained from Swiss federal office	Jumping	Cantons with a higher rate of bridge suicides had a higher rate of suicide by jumping from bridges - 1.28/1,00,000 citizens Other jumps – 1.10/1,00,000 citizens	Bridge jump, other jump
MONICA H SWAHN, LLOYD B POTTER[20]	Factors associated with the medical severity of suicide attempts in youths and young adults	Suicide and Life-Threatening Behavior	2001 Dec 1;32(Supplement to Issue 1):21-9	To examine factors focusing on demographic characteristics, mental health characteristics and the circumstances of the suicide attempt	153	Beck & Bishaar CES-D, BAST scales used	NA	Prior suicide attempts, depression, hopelessness and professional help seeking were associated with a lower risk of nearly lethal suicide attempts. Results suggest a higher level of mental health problems amongst the less lethal suicide attempters & 2 out of 8 demographic – age & education were significantly associated with nearly larval suicide attempts.	Gender, age, race, marital status, employment status, household size, education, clues prior attempt, called anyone after attempt, chances of being found, expected to die, time till arrival at hospital, brought self, impulsive suicide attempt
ANNETTE L BEAUTRAIS[21]	Suicide & serious suicide attempts in youth : A multiple group comparison study	American Journal of Psychiatry	2003; 160:1093-1099	Comparison of risk factors for suicide and medically serious nonfatal suicide attempts among youth under 25 years of age	336	Socio-demographic, childhood, family, psychosocial and psychiatric factors	NA	Mood disorder, history of psychiatric care, educational disadvantage, stressful circumstances play a similar role in	The same risk factors (mood disorder, history of psychiatric care, educational disadvantage,

								suicide and serious suicide attempts	stressful circumstances) play a similar role in suicide and serious suicide attempts.
CARMELLE PEISAH ET AL[22]	Clinipathological findings of suicide in elderly	Suicide and life threatening behaviors	Dec 2007,37(6) Page 648	Non specific clinicopathological findings	143	Case study of 3 series	Drug overdose of usual prescribe drugs	Medial temporal lobe associated to suicidal risk in elderly	Depression associated to vascular dementia and alzheimer disease
BERIT GROHLOT[23]	Adolescent suicide attempters	Suicide and life threatening behaviors	2006 36(6)	Repeated suicide attempts in 9years following a suicide attempt and estimate mortality rate and characteristic suicide index	92	Interview on structured questionnaire cohort study	NA	Poor mental health and lack of supportive parents predictive of repeated suicidal acts	Parental separation
MAURIZIO POMPILI[24]	Where Schizophrenic patient commit suicide	International journal psychiatry in medicine	35(2)171-1902005	Review literature on suicide of inpatients with Schizophrenia	NA	Medline ,Excerpta medica Psychit data reviewed	Jumping in front of trains, road traffic, jumping off, hanging and drowning	Suicide is the single major cause of premature death in patients with schizophrenia	schizophrenia
JIE ZHANG, LI ZHOU[25]	Suicidal ideations, plans and attempts among rural young Chinese: Effect of suicide death by a family member or friend	Community mental health journal	2011	To estimate the suicidal behaviors in china rural	2031	Comparative study	NA	Family members of suicide is at more risk	Family members Friends

ELLENOR MITTENDORFER ET AL[26]	Trends in adolescent suicide mortality in WHO European region	European Adolescent psychiatry	13:321-331 DOI:10.1001/500787004-0406	Study trends in adolescent suicide rates	30 country over 20 years	Cross sectional studies to estimate suicide rate in different country	NA	Increase or decrease of suicide rate is over or under expression	Classification factor
ALECANDERE Y DOMBROVSKI ET AL[27]	Sex differences in correlates of suicide attempt lethality in late life	American journal of geriatric psychiatry	2008 Nov 1;16(11):905-13	To compare suicide lethality among male and female in old age	125	Cross sectional study comparison	NA	More in older man than young man and less in old female than young female	Old age and gender
MARIA D LLORENTE, MICHAEL BURKE ET AL[28]	Prostate cancer:A significant Risk Factor for late life suicide	American journal of Geriatric Psychiatry	March 200513, 3 page 195	To determine the incidence of suicide and its Relevant correlates among men with prostate cancer	667	Population based retrospective cohort review	NA	Incidence of suicide among older men with prostate cancer is higher than previously suicide rate with prostate cancer was 274.7/100000	Prostate cancer
SPERO M MANSON,RHONDA WIEGMAN DICK ET AL[29]	Risk Factors for suicide among Indian Adolescents at a boarding school	Public Health Reports	1989 Nov;104(6):609	To examine the phenomenon of suicide among American Indians with special emphasis on youth	204	Longitudinal survey of American Indian students attending a Bureau of Indian Affairs funded but tribally administered boarding school in south east	NA	American Indian adolescents are at elevated risk for suicide	Depressive symptomatology, alcohol use ,lack of family support

<p>RASTOGI POOJA,KOCHAR SR[30]</p>	<p>Suicide in youth:shifting paradigm</p>	<p>Journal of Indian Academic Forensic Medicine32(1)</p>	<p>0971-0973</p>	<p>To find out pattern of suicideTo find out stressful life eventTo study the psychosocial cultural and precipitating factors for suicide in relation to age and gender with a view to formulate some preventive strategies</p>	<p>223</p>	<p>Study confined to cases of suicide epidemiological characteristic of cases of medico legal aspects were collected from the perusals of police papers</p>	<p>Unknown Poisoning(39%), Jumping against moving trains(25%), Hanging(19%),Drownin g(9%),Alcohol(4%),Burn (1.8%)</p>	<p>The method of suicide employed Generally reflect the different avenue available in community</p>	<p>Marital disharmony, shattered family relations, unhappy love affairs and depression</p>
<p>KEVIN CHIEN-CHANG WU ET AL[31]</p>	<p>Suicide Methods in Asia: Implications in Suicide Prevention</p>	<p>International Journal of Environmental Research and Public Health</p>	<p>2012 04;9(4):1135-58</p>	<p>To examine the leading suicide methods in different Asian countries, their trend, their age- and sex-specific characteristics, and their implications for suicide prevention</p>	<p>NA</p>	<p>Using “suicide”, “method”, “means”, “Asia”, and the names of Asian countries as the key words, literature related to suicide methods in different Asian countries were searched on PubMed, PsycINFO, and Google Scholar.</p>	<p>hanging and solid/liquid poisoning (mainly with pesticides)</p>	<p>Suicide methods are important for public health approaches to suicide prevention with sensitivity to socio-cultural, economic, and religious factors in different countries.</p>	<p>NA</p>

ANIL RA, NADKARNI A.[32]	Suicide in India: a systematic review	Shanghai archives of psychiatry	2014 Apr;26(2):69.	Systematically review existing literature on suicide and the factors associated with suicide in India	NA	PubMed, PsycINFO, EMBASE, Global Health, Google Scholar and IndMED were searched using appropriate search terms	Hanging and ingestion of organophosph ate pesticides	Compared to suicides in high- income countries, suicide in India is more prevalent in women (particularly young women), is much more likely to involve ingestion of pesticides, is more closely associated with poverty, and is less closely associated with mental illness.	poverty
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(NA- not available in the article.)

CONCLUSION: Increasing age specially old age, gender and related problems like prostate and other cancers, depression and its symptomatologies associated with vascular dementia or Alzheimer increase the chances of suicide among geriatric population. Expected to die and time till arrival to hospital may also have influence on suicidal risk behavior. The psychiatric morbidities especially affective disorder, impulsiveness, schizophrenia and related marriages and other psychopathologies further worsen suicidal behavior.

Hanging and pesticide ingestion is more common mean of suicide in Asian countries whereas hanging, firearms, poisoning with drugs and jumping from a height are more evident in western countries.

The means of act of suicide in various regions across the globe is different, so that there is need for making strategy to prevent it accordingly.

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