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ORIGINAL ARTICLE

Risk factors assessment of suicide cases in Punjab Pakistan & medico legal frame work shortcomings in Pakistan related to psychological autopsy -a case control psychological autopsy study

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ABSTRACT

Background: Psychological autopsy in Forensic Medicine context deals with the study of medico legal factors which affected victim to commit suicide. This area of Forensic Medicine is usually rarely addressed in research all over the world and especially in the Pakistan. This study is a case control study to look for the factors and their affiliation to medicolegal frame work shortcomings in Pakistan especially related to psychological autopsy.
Aim: T**o** assess different psychological factors which has influenced the victims to commit suicide and compared with the controls who were usually next of kin of these victims.
Methods: A case control autopsy study was designed to investigate the factors resultant of psychological autopsy of 100 cases in four districts (Lahore, Faisalabad, Multan & Sargodha) of Punjab , Pakistan occurring during the year 2018 to 2021. We conducted the semi structured interviews with nearly 100 living controls from the next of kin of these victims of suicide. Also a questionnaire circulated to health professional related to medicolegal shortcoming related to psychological autopsy in Punjab.
Results: Stresses related to personal and social life, psychiatric illness, domestic issues of marriages and poverty were the main reasons behind all these cases. There is need of implementation of reforms in our medico legal system for arrangements of qualified personals to conduct the psychological autopsy.
Conclusions: For proper assessment of risk factors, causes and precipitants of suicidal cases, a proper psychological autopsy is very important in our criminal justice system. For awareness related to mental disorders and psychiatric illness, there is need of mass campaigns to avoid suicidal deaths in community.
Keywords: Psychological autopsy, Risk factors, Suicide, Psychological disorders

INTRODUCTION

Psychological autopsy in Forensic Medicine context deals with the study of medico legal factors which affected victim to commit suicide. In this a detailed reconstruction of events is done which became the cause of suicide. Furthermore, in depth ascertainment of the significant risk factors of suicide is done in terms of circumstances of death and suicidal intent[1].

In the previous researches, they determined the risk factors which are usually psychological and social issues related to poverty , ignorance, psychiatric disorders (especially depression), marital status (being married), unemployment, and negative and stressful life events[2]. There are many loop holes and shortcoming in our criminal justice system also who let psychological autopsy not performed in all the suicidal cases. According to Pakistan being a low socioeconomically country of south-east Asia with variety demographic construction have suicidal tendency in the middle of ratio studied all over the world . According to World Bank and world health organization statics, during last two decades(2000-2022) the suicidal mortality ratio(number of suicidal death per 100,000 people per year) fluctuated between 8.70 to 9.20 overall in Pakistan with male ratio 12.80 to 13.20 and female ratio 4.60 to 4.90[3].

The Pakistan is the sixth most populous country in the world (population 227 million)[3,4]. Overall, 97% of the population are Muslims, 63% people live in rural areas and a third are below the poverty line. The literacy rate is around 44–50%. Official unemployment stands at 12% of the eligible workforce. Health spending is less than 1% of the annual budget; mental health does not have a separate budget[2]. Pakistan comes 5 in the number of most populated country[6].

Punjab is the largest province of Pakistan with respect to population with approximate population of 110 million according 2017 census[7]. Punjab is located bordering with India as continuation of Indian Punjab and sharing boundaries with other Provinces of Pakistan (Sindh, & Balochistan) and Azad Kashmir. It is sixth most populous separate entity, outside India and China, in the world. Lahore is the largest city and capital of Punjab with the highest population in Punjab 19 million according 2017 census. Faisalabad is the second largest city after Lahore if consider the metropolitan population in Punjab with population of 14 million according 2017 census. Multan is the main city of lower Punjab with 12 million populations and considered as the future capital of South Punjab if separate status of lower Punjab maybe declared in future. Punjab has vast agricultural area that produces 50-60 % of food crops of whole Pakistan and is hub of modern citizen life as well. Modern art and culture blossom in full swing in Punjab as film and drama industry is flourishing well in Punjab. Due to huge population and poverty, Punjab has high index of psychiatric and mental disorders in its varied and complex population. The risk factors related to psychological autopsy rarely researched before this study.

Sargodha district situated in the centre of Punjab, Pakistan and comes in the transitional state of upper Punjab entering into lower Punjab with population 3,903,588 according 2017 census with 65-70 % population living in rural and 30-35 % population in urban area[7]. It is main agricultural city and famous all over the world with best citrus producing district of Pakistan[8]. The population of Sargodha grew rapidly with the arrival of Muslim refugees from East Punjab, fleeing from the religious violence that followed the partition of India and the independence of Pakistan in 1947[9].

This study is a case control study to look for the factors and their affiliation to medicolegal frame work shortcomings in Pakistan especially related to psychological autopsy in the district Sargodha. A case control autopsy study was designed to investigate the factors resultant of psychological autopsy of 100 cases in the Sargodha district of Pakistan occurring during the year 2018 to 2021. We conducted the semi structured interviews with nearly 100 living controls from the next of kin of these victims of suicide.

METHODOLOGY

Study design: This is a case control study for the assessment of different psychological factors which has influenced the victims to commit suicide and compared with the controls who were usually next of kin of these victims in district Sargodha, Punjab, Pakistan during the year 2018 to 2021. The control usually selected were the near contact persons, next of kin , any living relative, area personal knowing the suicidal victim , neighbors and any person who reported the incident. Semi structured interviews with nearly 100 living controls from the next of kin of these victims of suicide were conducted with similar questionnaire asked with each participants after informed connect l. Life difficulties, psychological illness (depression) and life events were

main factors which based the calculation of quantitative data in this study as already predicted in another study resulted in 60 % cases of suicides in Pakistan[10].

In the questionnaire the details were asked about age, sex, marital status, social status, educational level, geographical area, monthly income, history of psychological disorders, and history of treatment, number of suicidal attempts or self harm and duration of consultation with consultant before suicidal attempt . Family's knowledge, stressful life and awareness about suicide were also addressed. Different stressful events at specific situations of life like examinations/ entrance tests, broken affairs, assaults, insults and guilt; and feelings of remorse, worthlessness, hopelessness, depressed mood, etc. were also evaluated[13].

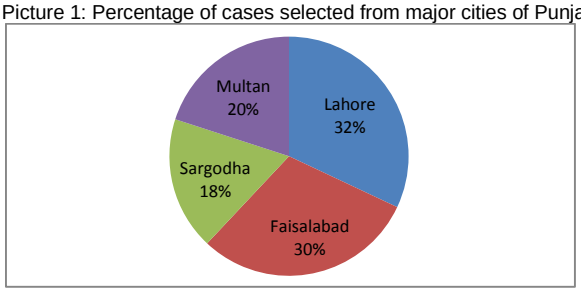
This study also addressed the different forms of shortcomings in our medicolagal system where psychological autopsy is not performed properly by medical personals. In this regard the data was collected from the concerned law enforcement authorities and hospital record of autopsies performed at DHQ Teaching Hospitals and medical colleges of Punjab districts.

Statistical analysis: Microsoft excel sheets version 2007 ware used to calculate the p-values for CHI-Test to see the differences between different variable in between cases and controls. Furthermore, t-test values were also determined on the collected to see association of risk factors and calculated the how different variable in this research deviate from null hypothesis of controls. The p-value for one and two tail test was also determined in this t –test. As a double check, the statistical analysis was also performed by using the F-test statistics by using the excel sheets to find association of different risk factors between cases and controls as well. In this p-value of F-test have conformational results with other tests as well.

RESULTS

Demographic Description: In this study there were 100 cases selected from four major districts of Punjab with nearly 60 percent of cases from Lahore and Faisalabad and rest of cases from Multan and Sargodha (picture 1). In these cities data were collected from the teaching hospitals connected with the medical colleges of respective cities. There were 60 males and 40 females in these 100 cases with male to female ratio of 3:2 (picture2). Age of cases ranged 15 to 55 years of age in this study with mean age was found 26 years of age (table 1). Similar ages of controls were found in this study after analyzing the questionnaire of 100 controls. The p- value of 0.236 also suggested strong association of age both in cases and controls (Table 1).

Picture 1: Percentage of cases selected from major cities of Punjab



Low socio-economical status was found in 65 percent of cases (n=62) as well as in controls (n=70).This factor was closely related with their monthly income that was less than 15000 per month in 50 percent of cases(n=46) and controls(n=52). Therefore the financial difficulties became the most dominant factors in these suicide cases as predicted by other studies. Illiteracy was found another factor that has clearly affected the suicide cases and controls. Nearly 50% of all cases (n=24) had no formal education and controls (n=50). Another 25-30% cases (n= 28) and controls (n=30) had only primary education.

Circumstances of Death: The methods of suicide adopted by these cases among males and female showed that the most frequent method was hanging (n=54 with male n=28 & female n=26) and poisoning by pesticides (n=20) followed by the poisoning by overdose of drugs (picture 2). Furthermore it was evident that most cases belonged to rural areas adopted poisoning by pesticides as compared to urban population where most practiced method of suicide was hanging and poisoning by drug overdoses. Other methods were jumping in rivers, canal& wells, firearm used and burning (Picture 2). The majority of suicides were conducted at home (n=86) with few at public places (n=4), hospital (n=4), workplace (n=3), spouse house(n=2) and others (n=1). Among the cases there were only 16 left the suicide note while 62 cases adopted extra precautionary measures to avoid the discovery of their suicide.

Picture 2: Means of suicides adopted by male &females' cases

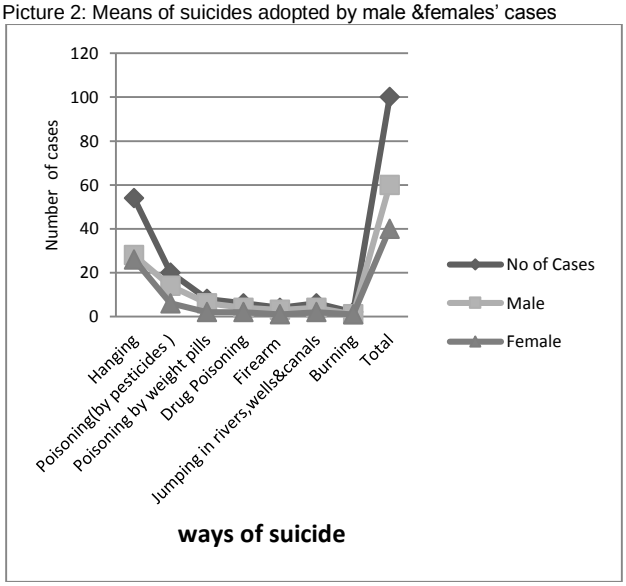


Table 1: Demographic data regarding 100 suicidal cases in Punjab

Age (in years)	n	Controls	p-value
15-19	16	22	
20-24	44	38	
25-29	28	24	
30-above	12	16	0.236
Locality			
Urban	64	68	
Rural	36	32	0.391
social status			
Low	62	70	
Middle	28	22	
High	10	8	0.218
Marital status			
Married	34	36	
Un-married	58	56	
Widow	2	1	
Divorced	6	7	0.723
Educational level			
Graduation & above	8	10	
Secondary education	28	30	
Primery education	22	20	
illiterate	42	50	0.569
Monthly income			
50,000 & above	18	16	
25,000-50,000	36	32	0.486
15000-lows	46	52	

Probable reason of suicide was also investigated in this study. The answers were like financial loss(n-8), discord from family(6), failure in exam(n=7), extramarital relation of spouse(10), stressful life style(10), psychiatric illness(n-10), use of drugs(n=6), quarreling with family members(n=8), disgraceful episode in workplace(n=4), refusal of love relationship(n=10), physical disability(n=6), premarital affair related issues(n=6), sexual harassments(n=4), forced marriages, discord from spouse, depression, unexpected life events and unemployment.

Psychiatric Illness: Nearly 70 % of cases (n=68) suffered with any form psychological illness as compared with 15% in controls (n=15). Hence the psychiatric illness showed greatest association (p-value=0.33) as a risk factor for these suicidal cases that could be

avoided if proper psychological assessment and treatment made available to these cases through social awareness. The psychological illness was further aggravated by the social loneliness of the cases as compared with controls. With few friends (n=50) & completely isolated cases (n=26) showed a worse situation where social dilemma of keeping psychological persons at arm's length was also indicated in this study. Major depressive psychological disorders (cases n=42) were also associated with the strong desire to commit suicide. This factor was also coined well in this study and showed the strongest associated risk factor with p-value =0.12 (Table 2).

Life Events: Major life events which had suddenly struck and added fuel to already existing psychiatric illness, had greatly influenced the cases (n=89) to commit suicide as compared with controls (n=22). Most of the cases (85%) experienced these life events in the previous 48 hours before committing suicide and 20% of controls showed desire to suicide. The life events as identified in cases were loss of close relationship(n=8), academic failure (n-8), sudden collapse of business with bankruptcy (n=9), increased arguments with family members living in same place (n=10), sexual harassments (n=8), increased undue arguments with spouse(n=8), spousal death and divorce (n=7), financial difficulties(n=10), sudden loss of job (n=6), come to know of extramarital affair of spouse(n=6), increased ridiculed by in laws after not bringing demanded dowry (n=10), moved to another city (n=2), convicted unjustified (n=4), false blame of adultery(n=8), severe accidental injury resulted in loss of work for more than 6 months (n=3) and major physical illness.

Medicolegal frame work shortcomings: Majority of health personals (more than 90%) considered the current medicolegal system practiced in teaching hospital of Punjab needed a lot of reforms. The current practice of doing psychological autopsy (investigations of circumstances of death) by police and law enforcement agencies was severely criticized. They suggested there should be properly qualified medical personal (doctors) having knowledge of Forensic Medicine should conduct psychological autopsy before declare of suicide. Furthermore, a psychiatrist or psychologist must be present to assist the Forensic expert to finalize the circumstances of death by suicides. They considered that it would clarify and resolve the conflicts related to decide whether it was suicide or homicide by doing so. Only 10% of doctors gave opinion in favor of current medicolegal system as they considered it extra burden on doctors if psychological autopsy performed by doctors instead of police investigation only.

Table 2. Risk Factor data regarding 100 suicidal cases in Punjab

Past suicide attempts	Cases	Controls	p value	Social networks	cases	controls	p-value
Yes	82	99		Isolated	26	17	
NO	18	1	0.368	Few friends(1-3)	50	38	
Physical disability				many friends(4 & more)	24	55	0.366
absent & others	97	99		**Psychiatric Disorders**			
absent	3	1	0.487	Absent	32	84	
Sexual abuse				Present	68	16	0.31
No & Others	84	99		**Major Depressive disorder**			
Yes	16	1	0.386	Absent	58	92	
Physical abuse				Present	42	8	0.12
No & Others	85	96		**Employment status**			
Yes	15	4	0.414	Employed & others	82	94	
Substance abuse				Unemployed	18	6	0.4
Absent	89	99		**Life events**			
present	11	1	0.428	Absent	11	78	
Personality disorder				Present	89	22	0.334
absent	80	95					
present	20	5	0.374				

DISCUSSION

The study has provided a very rare opportunity to look into the prima facie of suicidal cases in four districts of Punjab, Pakistan. This is first time that the psychological autopsy study performed in relation medicolegal scenario in Pakistan to see the prevalence of multiple risk factors for suicidal cases which could be avoidable through mass awareness about psychological disorders prevailing in the community. The findings of this study have suggested that prevalence suicidal cases more or less same in both males and females with slightly more percentage in males and similar with previous study performed in Karachi[2]. The age groups of cases ranged from 15 to 55 years of and mean age was found 26 years of age which is very close to the findings of study performed in Dhaka, Bangladesh[12]. It was already studied that married man belonging low socio-economical status suffered more with suicide[13,14]. This factor was clearly seen in the current study especially related to low socio-economical status with 70% of cases belonged low social status with p-value of 0.218 but mostly cases in this study were unmarried ,divorced or widow (58% of cases).

Many social events related to choices of marriage, relationship breakages & breakups, failure in exams, financial losses and death of very close person in their life, excessive arguments with family members or nearby living persons has broadly affected emotional state of the victims[15,16]. It was found in this study that the timing of events has vital association with act of suicide if the extreme stressful events are not consoled within 48 hours[17,18]. This fact was also was also demonstrated in this study as other studies[15,16]. Furthermore, stress full life style and financial difficulties posted complete collapse down effect to get rid of life to cope up stresses, was also evident in this study like other studies[19,20]. Method of suicide was hanging as most of cases adopted it as choice of suicidal (nearly 60%) with second method of choice remained poisoning (20%) in this study and others[21].

Major depressive disorders, type 1 personality disorders and other psychiatric illnesses (nearly 70 to 80% of cases in total), had strong association with act of committing suicide in the cases of this study. This fact was already well established in other research studies as well in past[22,23,24]. This has showed the need of mass campaigns to increase the awareness of masses about the mental health and need of social interaction. Mental disorders restricted the social gathering of a person which put him in the situation being trapped in loneliness that aggravated the psychiatric illness. As a result of unbearable stresses, their psychological illness forced them to commit suicide.

CONCLUSION

This study has also pointed out many shortcomings in our legal system as well. Many cases and controls showed a tendency to hide these cases of suicides because medico legal system of investigations is not fair in Punjab. Police investigations are prejudiced and biased as considered by a large number of health professionals and general public who participated in this study. Majority of health professionals have suggested a proper psychological autopsy of cases should be performed by trained medical professionals to declare a case of suicide in order to avoid any negligence to provide law and justice to victims if wrongly portrait a case of homicide as suicide due to biased police investigations.

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