

# EPIDEMIOLOGY OF SUICIDE IN FAISALABAD

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**Background:** Suicide is one of the ten leading causes of death in the world, accounting for more than 400,000 deaths annually. The incidence and pattern of suicide vary from country to country. Cultural, religious and social values play some role in this regard. Very few studies about the epidemiology of suicide have been conducted in Pakistan. We conducted this study on the patterns of suicide in autopsies conducted at Faisalabad from 1998 to 2001, to know the incidence of suicide, which subgroups of the population were most vulnerable to such deaths and the methods being used. **Materials and Methods:** The study includes 95 cases of suicidal deaths of both sexes belonging to different age groups autopsied at the Department of Forensic Medicine, Punjab Medical College, Faisalabad. Cases were selected on the basis of information from the scene of crime, police inquest, autopsy findings and interview with the acquaintances of the victim. Findings were tabulated and analyzed. **Results:** The study revealed that suicide rate was 1.12/100,000, with male preponderance. The peak incidence was in 20–29 years in males and 10–19 years in females. Hanging was the most common method. A seasonal surge in spring was noted. **Conclusion:** Suicide in Faisalabad is much lower compared to western countries. Suicides occur at a younger age in Faisalabad compared to western countries.

**KEY WORDS:** Suicide, Firearms, Seasonal variation.

## INTRODUCTION

Suicide is an act of taking ones own life voluntarily and intentionally <sup>1</sup>. Suicide is high in societies that are socially isolated, mobile and disorganized. It is lower in countries or subcultures whose religious or cultural mores proscribe suicide <sup>2</sup>.

Different suicide risk factors are present in different age groups. The teenager cannot compete, in the young and middle-aged adult there is a lack of accomplishment of life goals along with failure in social relationships while in the elderly there is loss of friends and loved ones, health and financial problems and idea of death <sup>3</sup>.

Suicide is one of the ten leading causes of death in the world, accounting for more than 400,000 deaths annually. The incidence and pattern of suicide vary from country to country. Cultural, religious and social values play some role in this regard <sup>4</sup>.

The rate of suicide varies from as low as 0.4/100,000 in Nigeria <sup>5</sup>, to as high as 22.75/100,000 in Geneva <sup>6</sup>.

Suicide is more common in males than females and the rates are said to increase with age <sup>2</sup>.

Differences exist in countries in the most common means of suicide depending on the availability of various methods. In England and Wales men use hanging, poisoning by gas or

vehicle exhaust and women are more likely to take an overdose <sup>2</sup>, but in USA, the most common method of suicide is firearm <sup>7</sup>, while in Singapore, jumping from a height is the commonest mode <sup>8</sup>.

Suicide has been noted to be more prevalent in spring and winter <sup>2</sup>.

Very few studies about the epidemiology of suicide have been conducted in Pakistan and even here most are based on newspaper reports <sup>9,10</sup>.

We chose to conduct this study on the patterns of suicide in autopsies conducted at Faisalabad to know the incidence, which subgroups of the population were most vulnerable to such deaths and the methods being used. This is the first step in trying to evaluate the risk factors for suicide in different population subgroups. This information can in turn be used in programmes aimed at prevention of suicide.

## MATERIAL AND METHODS

A total of 95 cases of deaths labelled as suicide on the basis of police inquest, autopsy findings, visit of the scene of crime and interview with relatives, friends and acquaintances of the victim were selected from all the autopsies conducted at the Department of Forensic Medicine Punjab Medical College Faisalabad between January 1, 1998 and December 31, 2001.

The cases were grouped on the basis of age, sex, method of suicide employed, region of the body injured and the season during which the suicide occurred.

## RESULTS

A total of 95 cases of suicide occurred during the study period. This formed 10.03% of the total of 947 autopsies conducted during this period.

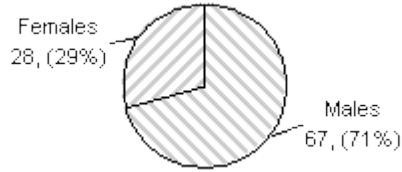
The highest incidence was during 2000 where an average of 2.25 people committed suicide every month and the lowest was during 2001 when an average of 1.67 suicides were reported per month. This translates to a rate of 1.12/100,000 for the city of Faisalabad, calculated from the mean population of Faisalabad for these four years (2119481) and the mean suicides for these four years (23.75).

Table-1: Year wise distribution of suicide

Year	No. of cases	Total Autopsies	Percentage	Incidence per month
1998	24	262	9.2	2.0
1999	24	213	11.3	2.0
2000	27	242	11.2	2.25
2001	20	230	8.7	1.67
Totals	95	947	10.03	1.98

Males were the predominant victims of suicide with a male to female ratio of 2.4: 1.

**Figure-1: Sex distribution of suicides**



The age of predilection in males was 20–29 years followed by 10–19 years where 43.16% and 28.42% of the suicides occurred respectively. In females these age groups were reversed with 35.89% cases occurring in the age group of 10–19 years followed by 33.33% in the 20–29 years age bracket.

Table-2: Age distribution of victims of suicide

Age (Years)	Males	Females	Total
10–19 yrs	16	11	27
20–29 yrs	32	09	41
30–39 yrs	11	07	18
40–49 yrs	06	01	07
50–59 yrs	01	0	01
60–69 yrs	01	0	01
<b>Total</b>	<b>67</b>	<b>28</b>	<b>95</b>

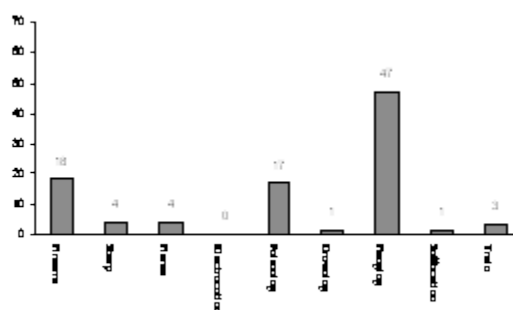
The most common method used for suicide was hanging which was used by 51.51% of the victims. This was followed by firearm in 18.17% and poisoning in 15.15%.

The preference for hanging as a method of suicide was especially dominant in males where 55.91% hung themselves compared to 41.02% of females. Firearms were used by 18.27% males and 17.94% females.

Out of the victims who used firearms, 58% shot themselves in the head and 33% in the abdomen, while in sharp weapon suicides, 71.4% injured the neck region and 28.6% the abdominal region. No suicidal cut of wrists or groin was noticed in our study.

We noted a seasonal variation with peak incidence in the months of April, June and May respectively. These months collectively constituted 37.12% of the total suicides with April having the highest of 15.15% of the total.

Figure-2: Methods of suicide



## DISCUSSION

Suicide is a leading cause of death in the world. However incidence and pattern of suicide varies from country to country depending on social, cultural and religious values <sup>4</sup>. The rate of suicide in our study is lower than that of countries like USA <sup>11, 12</sup>, UK <sup>13</sup> Switzerland <sup>6</sup>, China <sup>14</sup>, Singapore <sup>15</sup>, and Spain <sup>16</sup>, but is near to that of Jordan <sup>17</sup>, Nigeria <sup>5</sup> and the Malay population of Malaysia <sup>4</sup>. One reason for this difference may be the degree of urbanization and industrial development leading to increasing detachment of the individual from his social milieu resulting in a weakening of the individual's identification with the social group which controls and defines his actions <sup>2</sup>. Yet another important reason could be the role of religion specially the belief in the world hereafter, which prevents the feeling of hopelessness, a feeling that has been described as an important predisposing factor for suicide <sup>2</sup>. In addition the religious code of Islam strictly prohibits suicide <sup>1</sup>. Though suicide is also prohibited in Christianity however belief on religious teachings is not as strong in Western societies.

### Causative Agents used for Suicide

CAUSATIVE AGENTS		AGE GROUPS (Years)						TOTAL
		10–19	20–29	30–39	40–49	50–59	60–69	
Firearm	M	5	5	2	1	0	0	13
	F	4	1	0	0	0	0	5
Sharp	M	0	3	0	0	0	1	4
	F	0	0	0	0	0	0	0
Flame	M	0	0	0	0	0	0	0
	F	0	1	3	0	0	0	4
Electrocutation	M	0	0	0	0	0	0	0
	F	0	0	0	0	0	0	0
Poisoning	M	4	4	1	1	0	0	10
	F	4	2	1	0	0	0	7
Drowning	M	0	0	1	0	0	0	1
	F	0	0	0	0	0	0	0

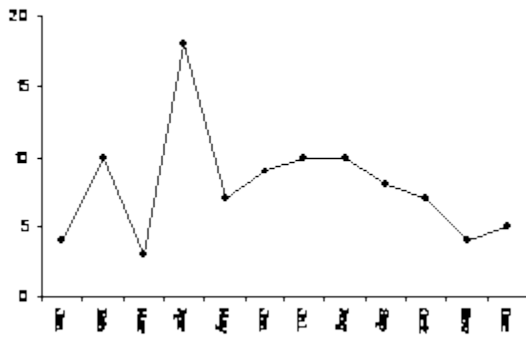
Hanging	M	7	19	5	4	1	0	36
	F	3	4	3	1	0	0	11
Suffocation	M	0	0	1	0	0	0	1
	F	0	0	0	0	0	0	0
Train	M	0	1	1	0	0	0	2
	F	0	1	0	0	0	0	1
<b>Total:</b>		<b>27</b>	<b>41</b>	<b>18</b>	<b>07</b>	<b>1</b>	<b>1</b>	<b>95</b>

Table-4: Region of body involved

Causative Agent	Region of body					
	Head	Neck	Chest	Abdomen	Upper limb	Lower limb
<b>Firearm</b>	9	1	2	7	0	0
<b>Sharp weapon</b>	0	3	0	0	0	0

Figure-3: Seasonal variation in suicidal deaths

The gender ratio in our study is similar to the accepted view of male dominance <sup>2</sup> and has also been reported in many other countries <sup>5, 6, 11, 13, 15, 17- 22</sup> and in Pakistan <sup>9, 10, 23</sup>.



About 67% of the suicides in our study occurred between the ages of 10–29 years. Only about 4% cases were above fifty years. This finding goes against the concept of increasing rate of suicide with advancing age in western literature <sup>2</sup>, and as revealed by studies in Ireland <sup>24</sup>, USA <sup>12</sup>, Italy <sup>19</sup>, Singapore <sup>8</sup>, Japan <sup>20</sup> and Spain <sup>21, 25</sup>, but is closer to the age of predilection reported in other less developed countries like Nigeria <sup>5</sup>, Malaysia <sup>4</sup>, West Indies <sup>18</sup> and Jordan <sup>16</sup> and by other studies in Pakistan <sup>9, 10, 23</sup>. The reason for suicide at an early age in our study could be the social pressures of growing up accompanied by marital and domestic issues in females (Age 10–19 years) and the economic pressures and failure to achieve life goals in cases of males (Age 20–29 years), in their early years of economically independent existence.

In our study the incidence decreased with advancing age and no cases were reported above fifty years in females and above seventy in males. The reason for this could be the family system in which elders are taken care of and usually relax and enjoy their advancing years with their grandchildren in addition to the increased inclination towards religion with advancing age usually noted in our setup.

Hanging, firearms and poisoning in that order were the three most common methods of suicide. This is in agreement with other studies conducted in different countries. Hanging is the most common method of suicide in many countries <sup>15, 20-22, 24, 26, 27</sup>. Poisoning is also amongst the common methods of suicide reported in many studies <sup>4, 6, 9, 10, 17, 18, 20, 22, 24, 27</sup>. Firearms have been reported as the method of choice in studies in USA <sup>12, 28, 29, 30, 31</sup>, amongst men in Geneva <sup>6</sup> and amongst whites in South Africa <sup>26</sup>.

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