

Original Article

Study on Pattern of Suicides in Malaysian and Indian Capital

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ABSTRACT

This report focuses on patterns of suicide in tri-centre setting. The autopsy records from the Forensic Department of University Malaya Medical Centre (UMMC) Kuala Lumpur, Forensic Department of Hospital Kuala Lumpur (HKL) and Department of Forensic and Toxicology, University College of Medical Sciences, Delhi were analysed retrospectively. Data was reviewed from January 2001 to December 2005. 1,866 cases were analysed with regard to age, gender, ethnicity and religion. Our study concludes that methods of committing suicide such as hanging, fall from height, poisoning, burning, cutting wrists or throat and gunshot wounds vary in magnitude at the above two centres. In UMMC fall from height (43%) was the most common method of committing suicide with most victims coming from the age group of 21-30 years whereas in HKL poisoning (53%) was the most common method of committing suicide with most victims coming from the age group of 31-40 years. While, at UCMS burning (45%) was the most common method with most victims coming from the age group of 21-30 years (23%). At UCMS, suicide was slightly higher amongst females (52%) as compared to males who committed suicide, by burning one's self/ self-immolation (33%) which was the most common method, whereas more males were involved in suicide at both UMMC (69%) and HKL (85%) with hanging (33%) and poisoning (48%) as the most prevalent methods respectively. Most of the suicide cases in UMMC (40%) and HKL (37%) involved the Chinese with hanging (16%) and poisoning (15%) as the preferred methods respectively. At UCMS, majority of victims of suicide were Hindus (82%) with burning oneself/ self-immolation (35%) as the most common method, while at HKL, majority of suicide victims belonged to Buddhists religion (37%) with poisoning (15%) as the most common method.

Key words: Suicide, Pattern of Suicides, Tri-centre, Hanging, Poisoning, Burning

INTRODUCTION

Suicide is the act of willfully ending one's own life. According to an estimate of WHO in the year 2000, nearly one million people died from suicide and 10 to 20 times more people attempted suicide worldwide. This represents one death every 40 seconds and one attempt every 3 seconds, on an average. In India as many as 1.14 lakh people have ended their life by committing suicide during the year 2005, that is 27.7% higher than the corresponding figure during the year 2005¹. Suicide has been reported as the second or third most common cause of death among children and adolescents all over the world²⁻⁴. There are several methods of committing suicide such as jumping from height, hanging, poisoning, cutting wrists or throat, burning, inhaling exhaust fumes and drowning as well as combination of different

methods⁵. The pattern of suicide varies according to sex, age, culture, ethnicity, religion and country⁶⁻⁹. Different epidemiological studies have been conducted in various countries¹⁰⁻¹⁴. There is significant data on pattern of suicide in a particular area or country, but simultaneous similar studies at different centres / country are lacking. Therefore, we planned and conducted this work focusing on this factor in three different centres located in two different countries i.e. University Malaya Medical Centre, Hospital Kuala Lumpur in Malaysia and University College of Medical Sciences, Delhi in India.

Malaysia has a population of 22,662,365 people out of which 2,200,00 people are residing in Kuala Lumpur whereas India the second most populous country in the

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world has a population of 1,068,572,000 people out of which 13,782,976 people are living in Delhi ¹⁵.

METHODOLOGY

The autopsy records of the Forensic Department of University Malaya Medical Centre (UMMC), Kuala Lumpur, Forensic Department of Hospital Kuala Lumpur and Department of Forensic Medicine & Toxicology, University College of Medical Sciences, Delhi were analysed for cases of suicide over a five-year period from January 2001 to December 2005. Cases had been designated as suicide only after police investigations and forensic autopsies reports considered them as suicidal. All doubtful, unclear or inconclusive cases were excluded from the study. Questionable cases were discussed among the authors and if intent could not be inferred with a reasonable amount of certainty, the case was not designated as a suicide. As a result, all cases of drowning were not included for the present work.

The case records were analysed with respect to age, sex, ethnicity, religion and method employed for suicide. Statistical analysis was performed using Statistical Package for Social Sciences (SPSS) for Windows version 13.0. The data comparison was done using Fisher Extract Test and calculating p-values.

RESULTS

A total of 1,866 cases were selected based upon the criteria mentioned in the material and methods from the 3 centres. At University College of Medical Sciences, Delhi (UCMS), the total number of cases of suicide was 1029 from January 2001 to December 2005, with the highest figure of 239 cases reported during the year 2001, and the lowest figure of 156 cases reported during 2003. During the same period, University Malaya Medical Centre (UMMC), had 298 cases of suicide with maximum number of 71 cases in the year 2002, and minimum 43 cases in 2003. While at Hospital Kuala Lumpur (HKL), the total number of suicide cases was 539 with maximum number of 182 cases reported during 2003 and the minimum number of 52 cases reported during the year 2002. The year wise distribution of cases is given below in figure 1.

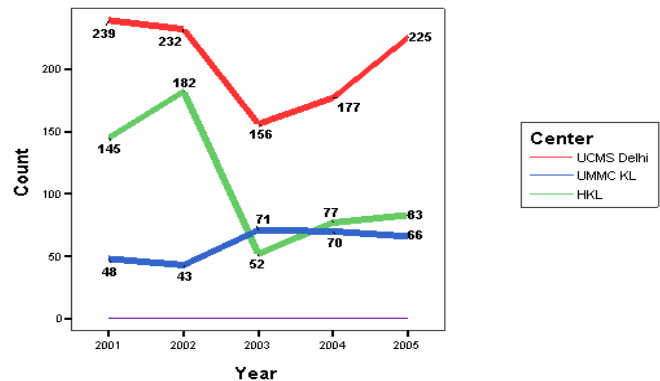


Figure 1: Number of suicide cases in three different centres from 2001 to 2005

Figure 2 depicts the different methods employed for committing suicide at the three different centres. At UCMS, suicide by burning one's self (self-immolation) was observed as the most common method found in 45% cases, followed by hanging (33%), poisoning (18%), fall from height (2%) and others that included gunshot, cutting and stabbing injuries (2%). Whereas at UMMC, hanging (43%) was the most common method of suicide, followed by fall from height (32%), poisoning (17%), others (7%) and burning one's self (1%) and at HKL, poisoning (53%) was the most common method of suicide, followed by fall from height (24%), hanging (19%) and others (4%). No case of self-immolation was observed at this centre.

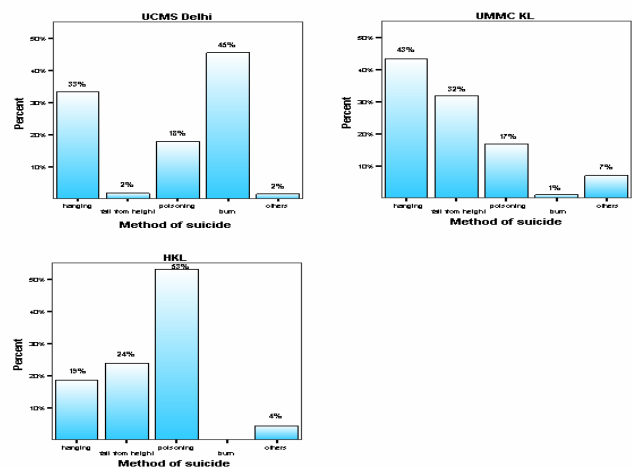


Figure 2: Different Methods of Suicide at three centres

As shown in Figure 3, when data was analysed considering the relationship of gender with the method of committing suicide at the three centres, at UCMS, overall there were 52% cases pertaining to females. Out of these ~52% cases the most common method of committing suicide adopted was burning one's self/ self-immolation (33%), followed by hanging (12%), poisoning (6%) and fall from height (~1%). On the contrary among the remaining 48% cases pertaining to males, hanging (22%) was seen as the most common method of suicide, followed by poisoning (12%), burning one's self / self-immolation (12%), fall from height (1%) and others (1%). While at UMMC, overall there were ~ 31% cases belonging to females. Out of these (31% cases) the most common method of suicide adopted was fall from height (12%), followed by hanging (10%), poisoning (5%), others (2%) and burning one's self / self-immolation(~2%). Meanwhile, 69% of cases belonged to males at UMMC, out of which hanging (33%) was the most common method of suicide, followed by fall from height (19%), poisoning (12%) and others (5%). At HKL, 15% of cases belonged to females, out of which the most common method of suicide adopted was fall from height (7%), followed by poisoning (5%) and hanging (3%). Whereas 85% of cases belonged to males at this centre out of which the most common method of suicide adopted was poisoning(48%), followed by fall from height (17%), hanging(16%) and (4%) from other methods.

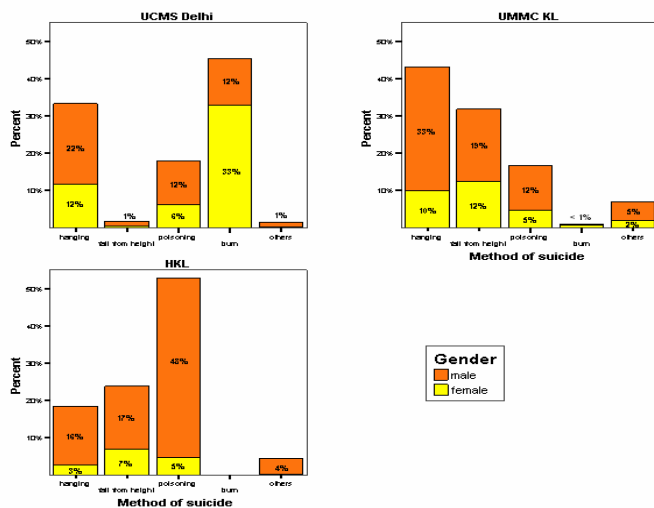


Figure 3: Different Methods of Suicide according to gender

Figure 4, describes different methods of suicide in relation to the age groups. At UCMS, 33% used hanging as a method of suicide and the majority was from the age group of 21-30 years (n=162, 16%) with the least from the age group of >70 years (n=2, <1%). Fall from height was taken up by 2% of the total number of cases and the majority was from the age group of 31-40 years (n=6, 1%) with the least from the age group of >70 years (n=1, <1%). When poisoning was considered as a method of suicide it consisted of 18% of the total number of cases, the majority was from the age group of 21-30 years (n=81, 8%) with the least from the age group of 61-70 years (n=2, <1%). Burning one's self/self-immolation, which was responsible for 45% of the total number of cases, the majority was from the age group of 21-30 years (n=235, 23%) with the least from the age group of 61-70 years (n=3, <1%). For other methods of suicide that consisted 2% of the total number of cases, the majority was from the age group of 21-30 years (n=9, 1%) with the least from the age group of 41-50 years (n=3, <1%).

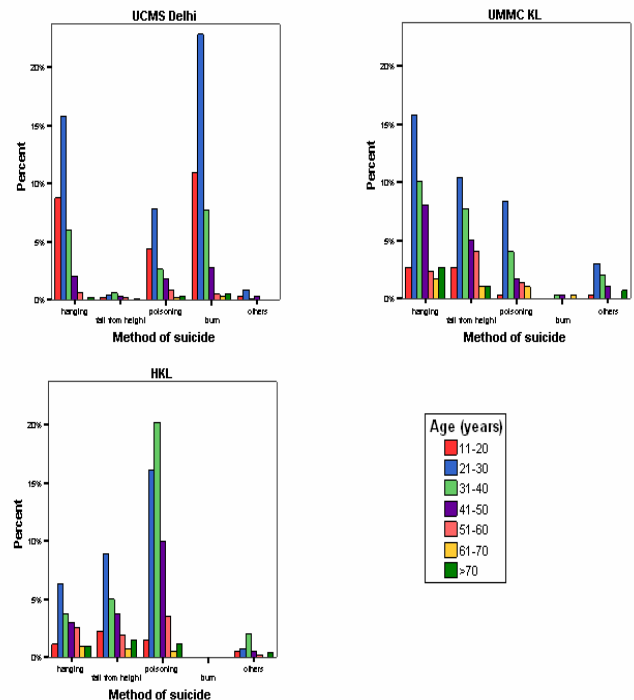


Figure 4: Different methods of suicide with relation to age

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At UMMC, 43% used hanging as a method of suicide and the majority was from the age group of 21-30 years (n=47, 16%) with the least from the age group of 61-70 years (n=5, 2%). Regarding fall from height, that consisted of 32% of total number of cases, the majority was from the age group of 21-30 years (n=31, 10%) with the least from the age groups of 61-70 and >70 years (n=3, 1%). Poisoning, that was responsible for 17% cases, the majority was from the age group of 21-30 years (n=25, 8%) with the least from the age group of 11-20 years (n=1, <1%). Burning one's self/self-immolation, that lead to death in 1% of cases, the majority was from the age groups of 31-40, 41-50 and 61-70 years (n=1, <1%). Regarding other methods of suicides that were reported among 7% of cases, the majority was from the age group of 21-30 years (n=9, 3%) with the least from the age group of 11-20 years (n=1, <1%).

The data from HKL revealed that 19% of cases used hanging as a method of suicide and the majority was from the age group of 21-30 years (n=34, 6%) with the least from the age groups of 61-70 and >70 years (n=5, 1%). Fall from height, which was responsible for 24% of total number of cases, the majority was from the age group of 21-30 years (n=48, 9%) with the least from the age group of 61-70 years (n=4, 1%). Poisoning, that consisted of 53% of total number of cases, the majority was from the age group of 31-40 years (n=109, 20%) with the least from the age group of 61-70 years (n=3, 1%). For other methods of suicides, which were responsible for 4% of total number of cases, the majority was again from the age group of 31-40 years (n=11, 2%) while the least were from the age group of 51-60 years (n=1, <1%). However there was no suicide reported from self-immolation.

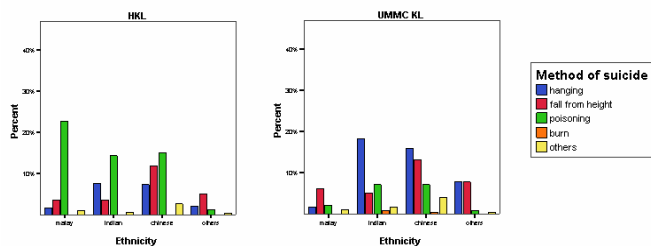


Figure 5 Methods of Suicide in relation to ethnicity at different centres

Figure 5 above demonstrates different methods of suicide in two different centres in Malaysia according to ethnicity. In HKL, 29% of the suicide victims were Malays with poisoning (n=122, 23%) as the most common method of suicide and other methods (n=5, 1%) as the least common. Twenty-six percent of the suicide victims were Indians with poisoning (n=77, 14%) as the most common method of suicide and other methods (n=3, 1%) as the least common. Thirty-seven percent of the suicide victims were Chinese with poisoning (n=81, 15%) as the most common method of suicide and other methods (n=14, 3%) as the least common. Eight percent of the suicide victims were from other ethnic groups with fall from height (n=27, 5%) as the most common method of suicide and other methods (n=2, <1%) as the least common. Other ethnic groups include foreigners, Sabahans and Sarawakians.

In UMMC, 11% of the suicide victims were Malays with fall from height (n=18, 6%) as the most common method of suicide and other methods (n=3, 1%) as the least common. Thirty-three percent of the suicide victims were Indians with hanging (n=54, 18%) as the most common method of suicide and burning one's self/self-immolation (n=2, 1%) as the least common. 40% of the suicide victims were Chinese with hanging (n=47, 16%) as the most common method of suicide and burning / self-immolation (n=1, <1%) as the least common. Sixteen percent of the suicide victims were from other ethnic groups with hanging and fall from height (n=23, 8%) as the most common methods of suicide and other methods (n=1, <1%) as the least common.

Figure 6 below shows the different methods of suicide in two different centres according to religion. At UCMS, 17% of the suicide victims were Muslims with burning one's self / self-immolation (n=103, 10%) as the most common method of suicide and fall from height (n=4, <1%) as the least common. Eighty-two percent of the suicide victims were Hindus with burning one's self / self-immolation (n=363, 35%) as the most common method of suicide and other methods of suicide (n=9, 1%) as the least common. Less than 1 % of the suicide victims were Christians with hanging and fall from height (n=1, <1%) as the most common methods of suicide.

Less than 1% of the suicide victims were from other religions with hanging (n=4, <1%) as the most common method of suicide and poisoning (n=1, <1%) as the least common.

Whereas at HKL, 29% of the suicide victims were Muslims with poisoning (n=123, 23%) as the most common method of suicide and other methods of suicide (n=5, 1%) as the least common. Twenty-four percent of the suicide victims were Hindus with poisoning (n=73, 14%) as the most common method of suicide and other methods of suicide (n=3, 1%) as the least common. Thirty-seven percent of the suicide victims were Buddhists with poisoning (n=82, 15%) as the most common method of suicide and other methods of suicide (n=14, 3%) as the least common. Less than 1 % of the suicide victims were Christians with hanging, poisoning and fall from height (n=1, <1%) as the most common methods of suicide. Ten percent of the suicide victims were from other religions with fall from height (n=28, 5%) as the most common method of suicide and other methods of suicide (n=2, <1%) as the least common.

Religion

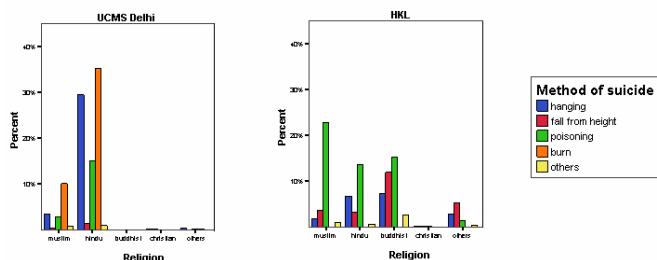


Figure 6. Different methods of suicide in two different centres in relation to Religion

DISCUSSION

Suicide is one of the leading causes of death worldwide, as a result the World Health Organisation has highlighted the need for more comprehensive data on this major health problem¹⁶. The present study pertains to a total of 1,866 suicide cases and this data was collected from three different centres, namely: UCMS, India (1,029 cases), HKL, Malaysia (539 cases), and UMMC,

Malaysia (298 cases). Malaysia has a population of 22,662,365 people out of which 2,200,000 people are residing in Kuala Lumpur, whereas India has a population of 1,068,572,000 people out of which 13,782,976 people are residing in Delhi. The large population base accounts for higher number of cases at UCMS, Delhi than at the Malaysian centres.

The most prevalent methods of suicide in HKL and UMMC are poisoning and hanging respectively meanwhile in UCMS the most common method is burning one's self/self-immolation. When the data on different methods of suicides in India and Malaysia was compared, the results were statistically significant. In case of suicide by self-immolation between these two countries, the figures were significantly higher at UCMS (p-value= >0.001), whereas the figures were significantly higher for hanging and poisoning at HKL along with UMMC (combined) in comparison with UCMS (p-value= 0.027 for hanging and >0.001 for poisoning). Similarly, when fall from height was compared, the figures were significantly higher at Malaysian centres in comparison to the Indian centre (p-value=0.001). This data shows that methods of suicide vary from country to country, a method more prevalent in one country may not be popular in another country. While hanging is a popular method in Saudi Arabia⁶, Turkey⁸ and Hungary¹⁷, poisoning is reported as the most common method in studies of Australia⁹ and U.K¹⁸. Analysis of studies on suicide during the last century across the globe suggest that in majority of countries hanging is the most common method of suicide¹⁹. This may be attributed to increased acceptability, easy availability, relatively less painful and virtually almost successful nature of the death associated with hanging.

Poisoning is another very common method of committing suicide especially amongst mentally ill and old aged individuals²⁰. Drugs and other substances more popular for committing suicides are: analgesics, antidepressants, CO, insecticides, corrosives and fumigants (particularly in India). In the present study the common substances used for poisoning include paraquat, carbon monoxide, organophosphate and Aluminium phosphide. Paraquat is widely used for weed control in fruit orchards and

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plantation crops. Deliberate ingestion of paraquat has been responsible for a large number of pesticide-related deaths. Malaysia is one of the world's largest paraquat manufacturing countries. There is concern that the easy availability of pesticides leads to suicides that might not occur otherwise. Peculiarly in India, suicide by Aluminium phosphide is quite common as this compound is widely used as rodenticide for food grain preservation particularly in northern part of the country. Another uniqueness observed in the Indian scenario is the high incidence of cases of self-burning (also known as self-immolation or self-incineration) particularly amongst the young females, due to socio-cultural reason of dowry. Although, this method is reported significantly in some other studies yet majority of suicides by self-burning were a form of political protest rather than due to cultural reason²¹. *Sati* (a form of suicide by a widow by sitting on the funeral pyre of her dead husband) was a customary practice in ancient India (made illegal in the year 1956) and has been seen as a sacred form of death. This along with easy availability of Kerosene oil, which is found in almost every household in India, may be the reason for large number of suicidal deaths in this part of the world. Dowry is payment in cash or any kind by the bride's family to the bridegroom's family along with the giving away of the bride. The brides sometimes get tortured when the demand of dowry is not fulfilled and this drives them to commit suicide.

Globally more females attempt suicide but more males succeed in committing suicide. This was noted in UMMC and HKL but in UCMS the number of females that committed suicide exceeded males by 4%. This is probably due to the practice of dowry and sati as mentioned earlier. In the present study, most of the cases belong to the age group of 21-30 years. The National Crime Records Bureau of India states that out of the total suicide victims, 37.6% are youth in the age group of 15-29 years. Some risk factors among youth who commit suicide include: failure in examination, unfulfilled love affairs, unemployment/ under-employment, dowry disputes, impulsive aggressive behaviour, drug or alcohol addiction, and inability to cope with situational stress. The Indian scenario is not much different from the rest of the world as far as the reasons of suicide are

concerned. Depression is still one of the major causes. However, some of the major causes of depression among the people who had committed suicide in India are: poverty, physical illness, family disputes, and being unable to return the heavy loans taken to support agricultural pursuits. It is mostly the students and the rural farmers who had committed the maximum number of suicides in India in the recent years. The Indian law is quite strict in terms of dealing with suicides and the factors aiding a suicide. According to the Indian Penal Code (IPC) acts, whoever aids and abets suicide will be deemed punishable by law.

For UMMC, most of the suicide victims were of the Chinese ethnic group followed by Indians, other ethnic groups and Malays. HKL follows a similar pattern with most of the suicide victims from the Chinese ethnic group followed by Indians, Malays and other ethnic groups. Although the population of Malays in Malaysia is the highest (65.1%), this ethnic group was the least involved in suicide. The Chinese had the highest number of suicides in this study and their population in Malaysia is 26.1%. The population of Indians in Malaysia is only 7.7%, thus from this study we can conclude that the suicide rate is highest among Indians. This higher involvement of Indians in suicides was also reported in a similar study from Saudi Arabia⁶. The data for the variables discussed here could not be obtained from the UCMS centre. Therefore, comparative study could only be done between UMMC and HKL. Considering the ethnicity at both these Malaysian centres, the most prevalent methods of suicide at UMMC and HKL among Malays were fall from height and poisoning respectively, whereas, among Indians and Chinese they were hanging and poisoning, respectively. This data indicates that within the same ethnic group also, the preference of mode of suicide changes from country to country.

All major religions of the world do not encourage suicide and consider it as a sin. As cited in the Holy Quran, the evidence of forbidding suicide is quoted in verse 29 in Surah An-Nisaa as: "And do not kill yourselves, surely Allah is most Merciful to you." Qur'an 4:29. According to the Sunnah (life and way of the Prophet Muhammad),

any person who dies by committing suicide and shows no regret for his wrongdoing will spend an eternity in hell, re-enacting the act by which he took his own life. For Buddhists, since the first precept is to refrain from the destruction of life, including oneself, suicide is clearly considered a negative form of action. Despite this view, an ancient Asian ideology similar to seppuku (*hara-kiri*) continues to influence the oppressed Buddhists to choose the act of “honorable” suicide. In Catholicism, suicide has been considered a grave and mortal sin. The chief Catholic argument is that one’s life is the property of God, and to destroy that life is to wrongly assert dominion over the realm of God. In Hinduism, taking one’s own life is considered equally sinful as murdering another individual. Scriptures generally state that to die by committing suicide (and any type of violent death) results in an individual becoming a ghost. At UCMS, Hindus constitute 82% of all suicide cases and this may be accounted for the reason that Hindu religion is followed by the majority of population in Delhi. While, Buddhists accounts for about one-third (37%) suicides at HKL A very interesting observation found while comparing data from UCMS and HKL was that at both the centres Christians constituted less than one percent cases which may be due to their low population base in both the countries.

CONCLUSION

Our study concludes that prevalence of various methods of committing suicide vary from country to country. At UMMC fall from height (43%) was the most common method with most victims coming from the age group of 21-30 years. In HKL poisoning (53%) was the most common method with most victims coming from the age group of 31-40 years. While, at UCMS burning one’s self/self-immolation(45%) was the most common method with most victims coming from the age group of 21-30 years (23%). At UCMS there were more females (52%) who committed suicide with burning one’s self/self-immolation (33%) as the most common method compared to more males in both UMMC (69%) and HKL (85%) with hanging (33%) and poisoning (48%) as the most common methods respectively. Within the same ethnic group, the preference of method for

committing suicide changes from country to country. Among different religions, the rate of suicide is higher among Hindus as compared to followers of other religions.

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