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INNOVATION FOR TECHNOLOGY

RISK AND PROTECTIVE FACTORS ASSOCIATED WITH SUICIDE IN MAURITIUS

Final Report

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RESEARCH REPORT

RISK AND PROTECTIVE FACTORS ASSOCIATED WITH SUICIDE IN MAURITIUS:

Case – Control Study

Mauritius Institute of Health

October 2005

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SUMMARY

The Ministry of Social Security, National Solidarity and Senior Citizens Welfare and Reform Institutions commissioned the Mauritius Institute of Health to conduct a study on risk and protective factors associated with suicide in Mauritius. A population-based case-control study was conducted among suicide attempts aged 10-40 years occurring from June 2001 to June 2003. 400 Cases and 800 controls were randomly selected and matched for gender, age and region in the ratio of 1:2. Interviews were conducted with a pre-designed and pre-coded questionnaire. Supervisors and interviewers were trained prior to interviews. 1,200 respondents were interviewed within 1½ month.

34.3% of suicide attempts have a previous history of 1 to 2 attempts. About 25.0% signify their intent and have premonitions/dreams to commit suicide. Over 85.0% choose a method available at hand. They mainly absorb agricultural chemicals (54.2%) and swallow prescription drugs (37.8%). Most suicide attempts are rural, female, youth, single, married, with a low level of education and unemployed.

Factors associated with suicide are present at three distinct levels. At the individual level, parents death during childhood (42.5%), use of alcohol (41.6%), financial problems (38.0%), parents death at time of suicide (29.5%), loss of position (29.0%), loss of a loved person (20.0%), breaking of a love affair (22.8%), separation from dear ones (13.8%), serious accidents during childhood (5.0%) and suffering from fatal diseases (2.8%) mainly trigger suicide attempt. Physical abuse, sexual abuse and psychological abuse during childhood; substance abuse; and previous suicide attempts/ deliberate self-harm also induce suicide. Some cases suffer from mental illness during childhood (5.5%) and at the time of attempt (14.3%). These cases are 3 times more likely to be both stressed (85.3%) and depressed (32.0%). Depression is strongly associated with people being despised by blood relations and friends, loss of self-esteem and prestige, those who regularly dispute with friends and families, a history of previous suicide attempt and other mental illnesses. At the social level, an adverse environment where violence among families prevails (38.5%), illicit drugs are sold (24.8%) and there is lot of criminal offences (20.8%) and robberies (40.2%) accentuate the risk of suicide. At the family level, dysfunctional family relationships which mainly include disputes with parents and spouses (71.8%) and fights with in-laws (28.1%) are common. Overall, dysfunctional family relationships, loss of parents during childhood, addiction to alcohol use, financial problems and mental illness mainly induce suicide attempt.

In contrast, there are factors which protect against suicide. An environment where people help each other (82.4%), a safe neighbourhood (78.5%) and an environment where people often visit each other (71.9%) minimises the risk of despair. Parents who show concern for

feelings and problems of children (87.8%) and parents who seriously consider problems of children (13.8%) offer invaluable support to youth. Participation in sports (35.6%) and social work (26.3%) and the early identification and treatment of psychological problems also avert suicide. Of equal importance is the knowledge and use of support services against psychological problems.

RECOMMENDATIONS

Worldwide, suicide claims one life every 3 hours. For every completed suicide there are around 30 suicide attempts.[1] In Mauritius, the rate is increasing. Society has since long sought to discourage the practice. Society has seen suicide attempt as a serious signal for help or an indication for a need for psychiatric treatment.[37] In addition, sociologists have shown that the common stimulus to suicide is intolerable psychological pain. Escape or release from the pain is sought through suicide. Such escape should be stopped. Hence, a national prevention strategy needs to be put in place for an aggressive campaign against this scourge. This study recommends some measures to that end. These recommendations aim at prevention at the primary and the postvention levels.

1. <u>Primary level – To reduce incidence of suicide</u>

1.1 Monitor risk behaviour in the community.
1.2 Promote awareness of suicidal tendencies and conditions related to them.
1.3 Promote public policies to reduce access to commonly used methods of suicide.
1.4 Train appropriate personnel for suicide prevention programmes.
1.5 Educate public against stigma for substance abuse and mental illness.
1.6 Compile update information on suicidal trends for the design of action plans.

2. <u>Post-suicidal level - To target survivors of attempted suicide</u>

2.1 Form suicide survival groups.
2.2 Help families of para-suicidal individuals to deal with attempts.
2.3 Deliver appropriate professional help to survivors of suicide.
2.4 Increase access to appropriate health and welfare facilities for survivors and people with suicidal tendencies.
2.5 Encourage people with substance abuse problem, suicidal tendencies and mental illnesses to seek help.

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1. INTRODUCTION

1.1 Background of the Study

Suicide can best be described as the destructive act of voluntarily taking one's own life. Suicide rate is increasing worldwide. While elderly people have had the highest rate of suicide traditionally and still do, the rate among teenage is increasing.[1] Suicide is a teenage epidemic and international public health emergency. From adolescence to middle-age, suicide is one of the leading causes of death for both males and females. However, males have a completed suicide rate 6 times greater than the rate for females[2] (Holinger et al, 1994). The annual international suicide rate nears 1 million at the rate of 14.5/100,000. Every year, approximately 750,000 people commit suicide worldwide.[32] According to WHO, 800,000 people committed suicide worldwide in 2002, with Canada having the highest rate.[35] Australia has the highest rate of completed suicide among young people in the industrialized world (16.4 per 100,000). 800,000 teenagers try to kill themselves every year and about 500,000 succeed. The number of people who attempt suicide but fail is estimated from 2 to 8 times the number of suicides. Men are more successful in their attempts. They use more lethal means.[1]

While poisoning, hanging and firearms are common among men, more women ingest pills or pesticides and burn themselves.[20] Suicide after parasuicide in young men is associated with substance misuse.[18] However, which method will be used to commit suicide is difficult to predict though suicidal behaviour, being complicated, can be recognised in many individuals.

Suicide is a complex human behaviour. A range of complex and multiple factors are associated with it. Four main factors have been identified: prior attempt or deliberate and severe self harm, mental illness, socioeconomic problems and drug and alcohol abuse.[28] Life stresses considered as the stress model (Garland et al, 1989) and mental disorders categorised as the mental illness model (Diekstra et al, 1995) are the two common etiological models0 which exist as explanations for suicide.

Research worldwide suggests that many completed youth suicides are triggered by mental illness (Kosky and Goldney, 1994). Depression is becoming as prevalent as the common cold in developed and developing nations.[4] Suicide risk increases substantially with exposure to multiple risk factors, with depression symptoms being the most important followed by previous suicide attempt and stress.[1,24] Tehen and Murray (1996) report a suicide rate of 10% in people with schizophrenia. Morell et al (1994) find that unemployment is a significant cause of psychological disturbance in young people.[10] According to Martin (1996), 75% of school youngsters who report sexual abuse also report suicidal behaviour. Beautrais (1996) remarks that young people who make serious suicide attempts in New Zealand have bad experiences of parental separation, poor parental relationships,

parental violent behaviour, alcoholism and imprisonment, were 'in care' during childhood and experienced sexual or physical abuse. But Hassan (1995) found that familial conflicts and breakdown of a romantic attachment are precipitating factors for suicide. The very high rates of youth unemployment, the fear of joblessness, broken relationships, unhappy family backgrounds, confusion of cultural identity and other influences produce overwhelming anxieties in youth who, in turn, commit suicide due to failure to coping with the demanding environment. This failure of adaptation makes the individual react in an abnormal manner, which shows signs of suicide.

Most of the times, suicide presents some warning signs. In youth, these manifest themselves as signs of depression, sad or 'empty' mood, declining school performance, loss of interest in social and sports activities, sleeping too much or too little, changes in weight or appetite, excessive talkativeness, rapid speech, racing thoughts, frequent mood changes, irritability, risky behaviour and exaggerated ideas of ability and importance. [33,29] In the elderly, the feeling of insecurity, physical illness and depression are salient determinants.

Depression, insecurity and other suicidal tendencies are addressed by the Suicide Prevention Unit of the Ministry of Social Security, the Brown Sequard Mental Health Care Centre and the Befrienders in Mauritius. However, the incidence of suicide is alarming. There were 119 suicide deaths in hospitals in 2003. It constituted 1.9% of all cases of deaths in hospitals (MOH, 2003). The suicide rate of 10/100,000 population in 1994 has trebled from 1994 to 1998. [22] From 1990 to 1998, the number of suicides rose from 204 to 375 yearly. There was at least 1 suicide every day or 14.8 per 100,000 population in 1998 for a population of 1,191,336. This rate is higher than some industrialized nations like Hungary or Greece.[35] Depression and alcoholism are associated with most cases of suicide according to a recent study.[35] However, other influential factors need exploration through innovative research designs.

1.2 Justification of the Study

Worldwide, suicide studies focus on family members of suicide victims and ecological analyses for data generation using psychological autopsies. (O' Carrol et al, 2001). These studies involve interviewing proxy informants, who are subject to a variety of recall bias (Franklin and Simmons, 1989). Furthermore, parents of control victims are not motivated and become emotional during discussions. Hence, the validity of findings of such research is questioned. Moreover, these studies deal mainly with mental health risk factors, such as depression. But by looking beyond mental health problems, the understanding of a complex range of factors that influence risk for suicide are better understood. The review of these factors leading to suicidal behaviour thus advocates a public health approach.

The exposure to many risk factors of interest is best determined by interviewing living subjects. Hence, the study of suicide attempts. These 'virtual' victims are likely to produce more valid data than research based on other strategies. The near-miss suicide victims directly provide first-hand information about their own exposures to various risk factors. The validity of this data is enhanced by comparing attempted cases with controls from the population. Furthermore, the findings of research from living attempts of suicide are comparable to the prevention of completed suicide.

The rate of suicide in Mauritius was 14.8 per 100,000 in 1998, as high as that of some industrialized countries. More people aged 10-40 years commit suicide. This situation needs urgent intervention. Effective intervention requires valid and reliable data. Hence, the wide range of factors associated with suicide need exploration.

An epidemiological study design, the case-control study, identifies exposure differences between cases and controls. It also helps to find potential risk and protective factors.

Furthermore, the suicide prevention programme in place needs evaluation. The high rate of suicide is a warning sign that interventions do not yield optimal results. Are interventions inappropriate? Is there a pressing need to reorient the targets and goals of the programme? These pertinent questions can only be answered through the collection of update information.

There exists some scant data on the predictors of suicide in Mauritius. The last survey dates from 1997. There is need for an update information on the issue to supplement the stress and mental health models as explanations for suicide.

1.3 Objectives

Main objective

To study risk /protective factors associated with suicide among suicide attempts (10-40 yrs) in 2001/03 in Mauritius.

Specific objectives

To determine the number of suicide attempts from June 2001 to June 2003 in Mauritius.

To identify life events and psychological factors influencing suicide.

To determine the influence of psychiatric illness on suicide.

To identify methods used to attempt suicide.

To determine the knowledge and use of institutions offering support against suicide.

To make recommendations with a view to reducing suicide, especially among youth in Mauritius.

1.4 Methodology

Study type

A population-based case-control study was conducted among suicide attempts aged 10-40 years in Mauritius from June 2001 to June 2003. This study was of a quantitative and qualitative nature.

Study population

Cases consisted of male and female suicide attempts aged between 10 and 40 years registered by the Police in Mauritius from June 2001 to June 2003. Controls comprised subjects of either gender aged 10 to 40 years in the population matched for gender, age and catchment area with cases.

Variables

Characteristics of attempts, childhood trauma factors, mental disorders, psychiatric factors, methods used for suicide, psychological factors, marital and family relationships and knowledge and use of support services in relation to suicide were inserted as main variables in the questionnaire for interviews.

Data collection technique/instrument

Data was collected through face to face interviews using a pre-designed and pre-coded questionnaire. This questionnaire carried a depression scale as well. Each question was accompanied by a Creole transliteration. This Creole version was put to respondents to ensure standardisation in the administration of the questionnaire.

Sampling

The Simple Random Sampling Method was used to identify suicide attempts aged between 10 and 40 years from June 2001 to June 2003. This short 2-year period helped to minimise recall bias. The Systematic Sampling Method was used to identify controls.

400 cases were randomly selected. For each case, 2 controls of the same age group, the same gender and residing in the neighbourhood were identified. Hence, the sample size amounted to 400 cases and 800 controls.

Data collection

The Police was contacted for a list of all suicide attempts from June 2001 to June 2003 through the Ministry of Social Security. 400 cases were randomly selected from the list. Then, each selected case was visited for an interview. After interviewing the case, 2 controls were identified for interviews.

Every 2 household on the right side of the home of each case was visited. A control of the same gender and age group as the case was selected till 2 controls were interviewed, that is, 1 case was matched with 2 controls. Prior to interviews, each respondent signed a consent form. Interviews took place as from 16.00 hours

on weekdays and from 9.00 hours during weekends and holidays. Respondents were interviewed by an interviewer of the same gender so as to establish a perfect interviewer-interviewee rapport. Permission was sought from parents before interviewing minors. However, 5.0% of cases refused. They were replaced.

Prior to interviews, the supervisors and interviewers were trained by the investigator, a psychiatrist, a psychologist and the president of Befrienders during a 1-day workshop. They were exposed to techniques of interviewing and recognition of signs/symptoms of mental illnesses. The services of Senior Youth Officers and Youth Officers from the Ministry of Youth and Sports were hired as supervisors and interviewers.

Prior to the data collection exercise, the tool for data collection, the questionnaire, was pre-tested on the field using 10% of the sample. These respondents did not constitute the true respondents of the study and were suicide attempts from January to May 2001. Pre-testing was the closing module of the training session for supervisors and interviewers.

Data management

The investigator closely monitored the data collection exercise through close contacts with supervisors and interviewers on the field. The questionnaires were checked for completeness and consistency. Then the investigator developed a code book from a 25% sample of the questionnaires, listing and categorising responses. Data entry clerks entered data. The investigator conducted univariate and bivariate data analysis. SPSS 9.0 was used for data entry and analysis. Crude odd ratios comparing cases with controls were worked out in order to determine the degree of exposure to factors related to suicide.

Quality control strategies

Bearing in mind the sensitivity of the issue under study and the identity of the respondents, some quality control strategies were put in place in order to acquire a data of high quality.

Reliability/validity of the findings

In order to improve on the reliability and validity of the findings of the study, data collected by the interviewers were triangulated with data collected for 50 respondents by the investigator. The investigator compared data he collected with data presented to him by the interviewers.

Pre-testing of data collection instrument

The data collection instrument, that is, the questionnaire was pre-tested by the investigator and the interviewers. The aim of this exercise was to refine the questionnaire and to improve the practical skills of the interviewers. It also helped the interviewers to master certain approaches like probing for sensitive

issues and techniques in convincing subjects to participate in the study.

Training of interviewers

Interviewers were exposed to the objectives of the study and stress was laid on the high quality of data. Emphasis was also laid on the principles and techniques of interviews with practice. Furthermore, the questionnaire was discussed in details including skipping patterns.

Supervision

The investigator of the study closely supervised the data collection exercise. Interviewers were given full assistance on the field. Consistency and completeness checks were conducted on completed questionnaires. Doubtful responses on questionnaires were verified for a second time on the field.

1.5 Limitations of the Study

This study, as any other studies, has certain limitations. However, these minor drawbacks did neither affect the implementation of the objectives of the study nor the validity or reliability of the findings.

Recall bias

Respondents complained of the length of the questionnaire and recalled events which occurred some 12 months back with difficulty. Some even did not remember what happened a month ago. Nevertheless, they were assisted by the trained interviewers to ease recall.

Refusal of collaboration

Some cases did not report exactly what happened to them before the attempt. Some even denied suicide. Others refused to be interviewed. But the prompt intervention of trained interviewers and supervisors overcame these obstacles.

1.6 Terminology

CES: Centre for Epidemiologic Studies
CI: Confidence Interval
IDUs: Injecting Drug Users
NIMH: National Institute of Mental Health
OR: Odds Ratio
Parasuicide: Apparent attempted suicide among mental patients without the intention of killing oneself
Sc/HSc : School Certificate/Higher School Certificate
SPSS: Statistical Packages for Social Sciences
WHO: World Health Organization

1.7 Socio-Demographic Characteristics of Suicide Attempts

2,180 individuals aged 10-40 years attempted suicide from June 2001 to June 2003, 970 males and 1,210 females. The rate of suicide attempt is 3.6/1,000 population, 3.2/1,000 for males and 4.1/1,000 for females yearly. The number of females is 1.2 times that of males.

1.7.1 Community type

People are 6 times more likely to commit suicide in rural areas.

1.7.2 Gender

Females are more likely to attempt suicide.

1.7.3 Age

Suicide attempt among children aged 10 to 14 years is uncommon. Almost half of the suicide attempts occur among youth.

1.7.4 Marital status

The rates of suicide are similar among single and married cases.

1.7.5 Education

There are more attempts among those with primary and secondary education.

1.7.6 Religion

Hindus are numerous followed by Christians and Muslims.

1.7.7 Occupation

Wage earners and homemakers are most likely to attempt suicide.

Table 1.7: Percentage distribution of characteristics

Characteristics	Case		Control	
	n	%	n	%
Community type				
Urban	60	15.0	120	15.1
Rural	340	85.0	680	84.9
Gender				
Male	186	46.5	372	46.5
Female	214	53.5	428	53.5
Age in years				
10 – 14	6	1.5	12	1.5
15 – 19	66	16.5	132	16.5
20 – 24	126	31.5	252	31.5
25 – 40	202	50.5	404	50.5
Marital status				
Single	175	43.8	406	50.8
Married	182	45.5	370	46.3
Consensual union	14	3.5	11	1.4
Divorced/separated/ widowed	29	7.3	13	1.6
Education				
Primary	145	36.3	224	28.0
Secondary	162	40.5	267	33.4
Sc/HSc	77	19.3	261	32.6
Tertiary	13	3.3	45	5.6
Vocational	3	0.8	3	0.4
Religion				
Hindu	256	64.0	518	64.8
Muslim	42	10.5	90	11.3
Christian	93	23.3	184	23.0
No religion	9	2.3	8	1.0
Occupation				
Unemployed	89	22.3	90	11.3
Student	35	8.8	146	18.3
Wage earner	184	46.0	448	56.0
Homemakers	79	19.8	113	14.1
Businessman	13	3.3	3	0.4
Living with whom				
Both parents	159	39.8	342	42.8
Mother	39	9.8	72	9.0
Father	12	3.0	1	0.1
Grand parents	6	1.5	7	0.9
Adopted child	2	0.5	0	0.0
Alone	5	0.5	9	1.1
My family	177	44.3	369	46.1
Physical disability				
Yes	14	3.7	17	2.2
No	369	96.3	760	97.8
All Respondents	400	33.3	800	66.7

2. RESULTS

The results of this study open up with the methods used to commit suicide and the reasons for doing so. The findings are further organised around risk and protective factors influencing suicide. Although there is much debate over factors related to suicide, many studies have identified factors associated with suicide risk. Mental illness, a previous suicide attempt or deliberate self-harm, a family history of suicide and substance use are prime factors (Beautrais 1999, De Leo 1999, Goldney 1998). On the other hand, there is little research into factors that may protect individuals against suicide (Beautrais 1998, De Leo et all 1999). But these are very often extrapolated from the evidence of risk.

2.1 Attempt at Suicide

2.1.1 Reasons for suicide attempt

Respondents mostly commit suicide because of family disputes, love affair termination and battered wife, as seen in figure 2.1.1. Family disputes are common both in the rural and urban regions, among females and youth. While love affair termination occurs mainly among youth, battered wife is common among older cases. Youth mainly frighten parents while young married females frighten their partners and in-laws.

Figure 2.1.1: Percentage distribution of reasons for suicide attempt

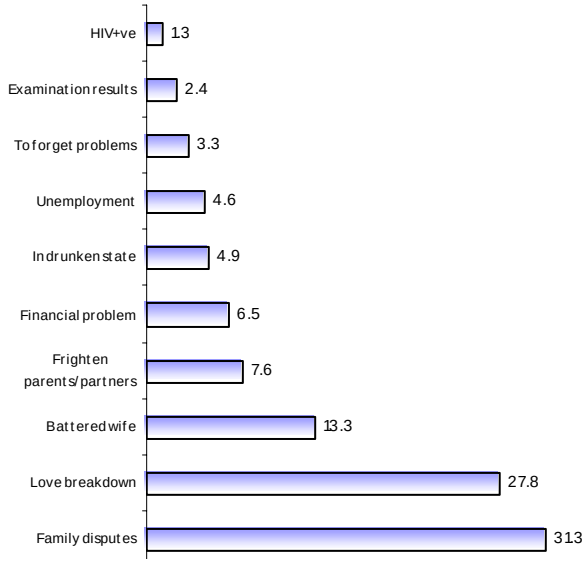
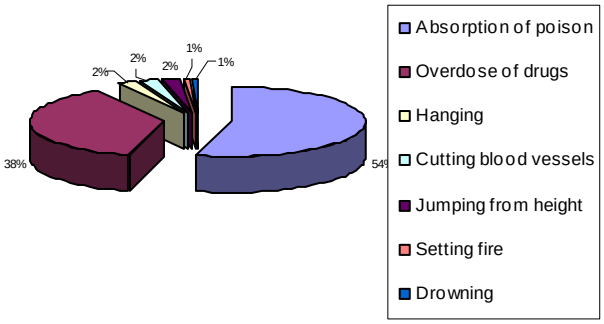


Figure 2.1.2: Percentage distribution of methods used to attempt suicide

2.1.2 Method used to attempt

Suicide attempts mainly use agricultural chemicals and prescription drugs, as shown in figure 2.1.2. Urban (67.8%), male (61.2%) and older cases (62.8%) are likely to absorb poison. Female youth (66.8%) and rural respondents (51.9%) swallow handfuls of tablets.



2.1.3 Reasons for choosing method

86.0% of respondents choose a method at hand followed by others (17.5%) who choose efficient ones and some (12.9%) who think of easy to use methods. Urban (78.9%), male (90.4%) and older cases (71.9%) mostly choose readily available methods. The choice of a method at hand shows that not much time lapses between the thought and the act of suicide. Hence, most suicide attempts seem to be impulsive.

2.2 Risk Factors

A low socio-economic disadvantage comprising low educational achievement and unemployment ; legal problems including imprisonment ; child abuse ; losses comprising loss of employment, physical health, marital breakdown, death and other interpersonal losses; and ease of access to poisons are identified as main risk factors. Hereunder follows a description of the association of each risk factor with suicide.

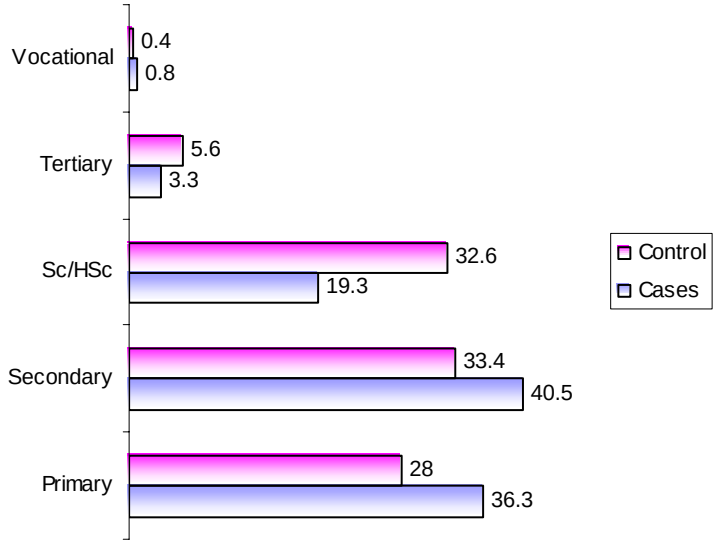
2.2.1 Socio-economic disadvantage

Socio-economic disadvantage constitutes a low level of education up to the secondary level but not attaining the School Certificate and unemployment. Unemployment is directly and indirectly related to suicide. While unemployment predates depression, job loss produces suicide tendencies.[2] Morrell et al (1994) showed that unemployment brings psychological disturbance in youth and hence suicidal thoughts. On the other hand, a low level of education diminishes the chance of getting a job.

2.2.1.1 Low level of education

A low level of education characterised by the primary and secondary levels is associated with suicide (OR = 1.077, CI = 1.018 – 2.727), as shown in figure 2.2.1.1. Cases from the urban areas (81.7%), males (77.4%) and those aged above 25 years (82.4%) are more likely to commit suicide among those with a low level of education.

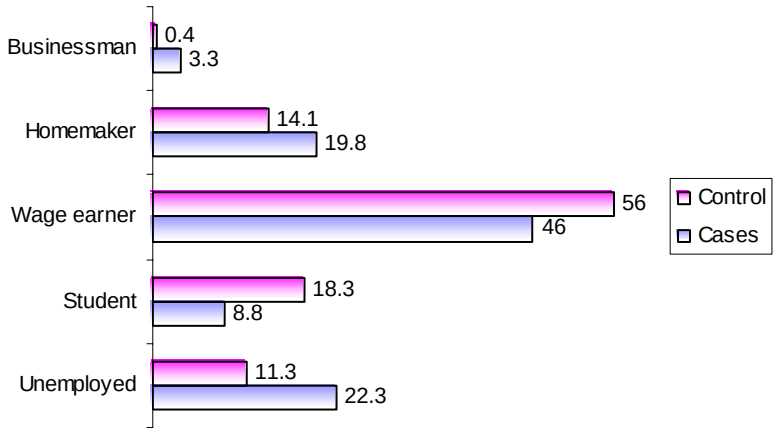
Figure 2.2.1.1: Percentage distribution of education



2.2.1.2 Unemployment

Figure 2.2.1.2: Percentage distribution of unemployment

Unemployed individuals are twice more likely to commit suicide (OR = 2.258, CI = 1.636 – 3.115), as seen in figure 2.2.1.2. Rural (22.9%), male (25.3%) and youth (24.7%) mainly constitute those unemployed cases. But a substantial proportion of those in employment also commit suicide among both cases and controls.



2.2.2 Childhood trauma

Several studies have shown that suicidal behaviour come from adverse childhood pathways (Brent, 1996). Child abuse is one of the traumas which leave a deep scar in the life of the growing child and which always haunts him. Child abuse has been demonstrated of having a direct effect on suicide by many studies (Martin, 1996). Research has shown that exposure to physical or sexual abuse during childhood can increase the probability of suicidal behaviour (Pennebaker,1997).

Table 2.2.2: Percentage distribution of child abuse

Child abuse is characterised by physical and sexual abuse by adults and peers, psychological and emotional abuse in this study, as shown in table 2.2.2.

Type of Child Abuse	Case	Control	Odds Ratio	Confidence Interval (95.0%)
Physical abuse adults	22.3	12.1	2.074	1.510 – 2.848
Physical abuse peers	18.0	16.9	1.081	1.019 – 1.482
Sexual abuse by adults	9.9	3.0	1.282	1.152 – 1.525
Sexual abuse by peers	7.1	2.0	1.286	1.126 – 1.563
Psychological abuse	25.8	23.0	1.011	1.001 – 1.142
Emotional abuse	28.0	31.0	0.866	0.664 – 1.128

2.2.2.1 Physical abuse

Children physically abused by adults and peers are likely to attempt suicide later in life. Urban cases (38.3%), males (28.0%) and youth (22.7%) are mostly abused physically by adults. Similarly, urban (31.7%) male (25.8%) but cases aged over 25 years (19.1%) are likely to be physically abused by peers.

2.2.2.2 Sexual abuse

Children sexually abused by adults and peers also tend to end their lives. Urban (26.4%), male (11.8%) and older cases aged between 25 and 40 years (12.3%) tend to be sexually abused by adults. Rural (8.1%), female (7.1%) and older (9.0% cases are likely to be sexually abused by peers.

2.2.2.3 Psychological abuse

Psychological abuse may lead to suicidal behaviour. Psychologically abused children are likely to commit suicide while growing up comprising mostly urban (30.0%), males (30.1%) and those aged 25 and 40 years (7.4%) mostly.

2.2.2.3 Emotional abuse

Emotional abuse does not act as a risk factor for suicide. Urban (31.7%), male (35.5%) and youth controls (35.2%) are more likely to be emotionally abused. They most probably have strong coping skills.

2.2.3 Conflict of parents with the law

Many young people with suicidal tendencies come from difficult family background (Eckersley,1993). One such situation is the involvement of parents in unlawful acts resulting into incarceration. Parents of controls (93.7%) are more likely to be incarcerated than those of cases (89.3%). Hence, incarceration of parents during childhood is not a risk factor in this study (OR = .56, CI = .36 - .85). Rural (90.0%), female (90.7%) and older controls mostly have parents who are incarcerated.

2.2.4 Substance use

Literature shows higher rates of suicide among alcoholics and drug abusers (Lester,1992). Drug use is determined through the use of alcohol and illicit drugs by parents, peers, partners and respondents themselves in this study, as seen in table 2.2.4.

Table 2.2.4: Percentage distribution of substance use

Use of Substance	Case	Control	Odds Ratio	Confidence Interval (95.0%)
Parents				
Alcohol	66.8	63.9	1.043	0.721 – 1.508
Illicit drugs	2.1	9.1	0.22	0.08 – 0.63
Partners				
Illicit drugs	40.9	35.9	1.237	0.87 – 1.754
Peers				
Cigarette	64.0	59.6	1.202	0.94 – 1.541
Alcohol	66.2	60.4	1.287	1.000 – 1.655
Illicit drugs	16.9	8.8	2.118	1.479 – 3.034
High once week	48.4	36.2	1.649	1.291 – 2.105
Cases/controls				
Alcohol	41.6	30.0	1.003	0.99 – 1.006
Illicit drugs	2.6	1.8	1.008	0.99 – 1.017

2.2.4.1 Parents

While many parents of cases use alcohol, those of controls like to use illicit drugs. Parents of rural (69.8%) male (69.7%) and older cases (74.5%) use alcohol. In contrast, parents of urban (10.4%), male (10.2%) and youth (10.6%) controls use illegal drugs. Use of alcohol is related to older age while that of illicit drugs to a younger age.

2.2.4.2 Partners

Partners of cases are more likely to use substances comprising rural (42.6%), female (59.3%) and youth partners (62.5%).

2.2.4.3 Peers

Peer pressure is widely recognised to contribute to unsocial behaviour which may lead to suicide. Peers of cases are liable to use cigarette, illicit drugs and alcohol and get drunk or high at least once weekly. Peers of urban (81.7%), male (92.3%) and older cases (65.8%) mostly use alcohol. Friends of urban (21.7%), male (26.9%) and older (17.4%) cases use illicit drugs. Peers of urban cases (81.7%), males (90.2%) and older cases (70.4%) mostly use alcohol. Simultaneously, urban cases (68.3%), males (80.3%) and older respondents (56.6%) have friends who get high at least once weekly. Urban, male and old age are variables related to the use of drugs and suicide attempt.

2.2.4.4 Cases/controls

Cases are more likely to use both alcohol and illicit drugs. Urban (51.%), male (4.9%) and older cases (4.6%) use alcohol while rural (49.2%), male (72.3%) and older cases (51.8%) use illicit drugs. The male gender and older age are highly associated with the use of substance and suicide.

2.2.5 Previous suicide attempt/deliberate self-harm

Table 2.2.5: Percentage distribution of previous suicide attempt/deliberate self-harm

Suicide Attempt	Case	Control	Odds Ratio	Confidence Interval (95.0%)
Childhood	9.8	0.9	12.23	5.522 – 17.624
Parents	6.3	3.1	2.067	1.171 – 3.647
Cases/ controls	34.3	2.5	1.314	0.998 – 2.430
Blood relatives	10.8	9.6	1.129	0.762 – 1.675
Number of attempt (1-2)	92.3	87.5	1.714	0.204 – 1.399
Time of attempt (1-2 yrs)	75.0	31.1	1.523	0.104 – 2.626
Intent of attempt	17.5	2.5	1.483	0.179 – 2.250

Suicide attempts are higher for those who have a history of prior attempt (Silburn, Zubrick and Hayward, 1999). Previous suicide attempts and deliberate self-harm are explored during childhood of respondents and among their parents, as shown in table 2.2.5. Suicide experience during childhood is highly influential.

2.2.5.1 Childhood

Suicide attempt is common among those who try suicide during childhood. Mainly rural (10.6%), male (15.1%) and cases aged 25 - 40 years (10.6%) are twelve times more likely to have attempted suicide during childhood.

2.2.5.2 Parents

Parents of urban (8.3%), male (5.6%) and older (7.0%) cases are twice more likely to commit suicide.

2.2.5.3 Blood relatives

More blood relatives of cases attempt suicide constituting mainly of rural (9.4%), females (10.3%) and youth (13.1%).

2.2.5.4 Friends/ colleagues

Rural (11.5%), males (11.3%) and youth (12.1%) cases tend to have friends/colleagues who previously attempt suicide.

2.2.5.5 Cases

Cases mostly have a history of previous suicide attempt. They are likely to be urban cases (40.0%), males (35.5%) and youth (39.9%). Literature shows that they quickly switch on to suicide attempt anytime they are in difficulties. Previous suicide attempts always harbour suicidal thoughts. Most of the times they are withdraw themselves from society.

2.2.5.5.1 Number of previous attempt

Most cases tend to attempt 1 to 2 previous suicides compared with few controls who attempt only 1. These cases are mostly rural (93.3%), female (93.9%) and older (94.6%).

2.2.5.5.2 Time of attempt

Most suicide cases previously attempted suicide within 2 years. They are likely to be urban (65.0%), female (64.8%) and younger cases (67.5%).

2.2.5.5.3 Intent of attempt

Cases are more likely to have said that they will attempt suicide comprising mainly rural (17.4%), male (19.4%) and youth cases (19.2%). This finding is consistent with literature worldwide. 12.0% of people who think of suicide go to attempt it (Goldney et al, 2000).

2.2.5.5.4 Indication of intent

Cases disclose their intent of suicide to friends/relatives (35.6%), mothers (33.3%), brothers/sisters (8.3%), fathers (6.6%), colleagues (5.6%) and neighbours (2.8%).

2.2.5.5.5 Contents of intent

Cases mostly say that ‘I am tired with life’ (83.3%) followed by ‘I’II kill myself’ (16.6%) and ‘There is no use of living’ (21.2%).

2.2.6 Suicidal ideation

Thoughts about suicide, referred as suicidal ideation, poses as an important risk factor for suicide. About a quarter of cases (24.6%) have premonitions/dreams to attempt suicide. They are liable to be from the rural areas (41.4%), females (19.6%) and older respondents (36.9%). This ideation shows the presence of mental disorders, most likely schizophrenia. This means that about one quarter of those who attempt suicide may be schizophrenic.

2.2.7 Mental illness

Most people with a mental disorder are at a high risk of suicide. Mental disorder includes anxiety, depression, the psychoses and other disorders affecting cognition, mood and personality.[3] Mental illness history in individuals increases the risk for suicide attempt by 15 times (Tanney, 1992). Suicide is highly linked with depression, schizophrenia and personality disorders (Draper, 1995). Hence, mental illness is identified since childhood with emphasis on depression. The types of mental illness, their symptoms and treatment for such illnesses are also examined.

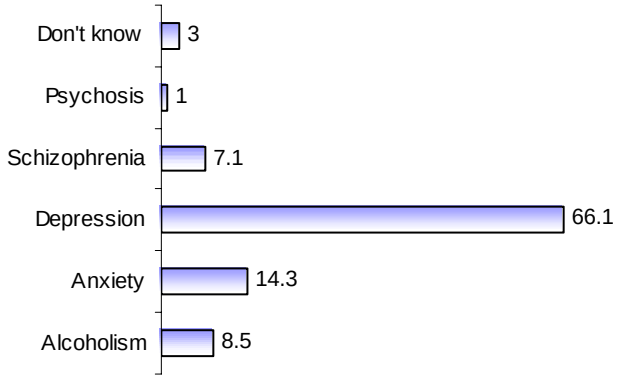
2.2.7.1 Mental illness among cases

According to self-report by cases, they are five times more likely to suffer from mental illness (5.5%) during childhood than controls (0.4%) (OR = 5.462, 95% CI = 4.539 – 11.980). The rate of mental illness rises as age rises. Cases (14.3%) are six times more likely to suffer from mental illness than controls (0.4%) (OR = 6.810, 95% CI = 3.210 – 9.206). Obviously, while rural (39.6%), female (61.4%) and youth cases (59.4%) suffer from mental illness during childhood, urban (71.9%), male (75.2%) and older respondents (81.0%) suffer later.

2.2.7.2 Type of mental illness

Depression followed by anxiety and alcoholism are common among cases who suffer from mental illnesses, as seen in figure 2.2.7.2. Urban (59.4%), female (66.7%) and older cases (52.2%) are depressed. Urban (68.8%), males (88.6%) and youth (91.2%) tend to be anxious.

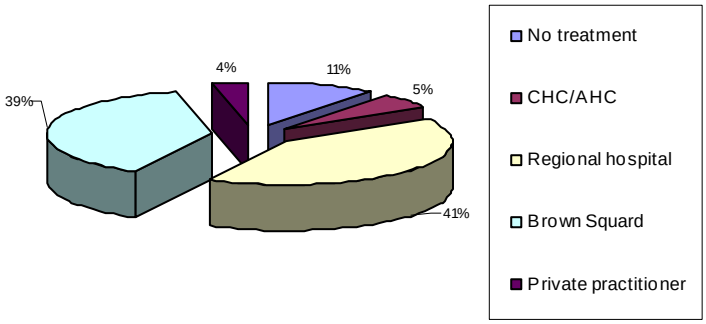
Figure 2.2.7.2: Percentage distribution of type of mental illness



2.2.7.3 Treatment for mental illness

Figure 2.2.7.3: Percentage distribution of treatment sites

Out of those 14.3% cases who suffer from mental illness, treatment at the regional hospitals and the Brown Sequard Mental Heatlh Care Centre seems popular, as shown in figure 2.2.7.3. Urban (56.9%), male (52.4%) and older cases (81.4%) mostly visit regional hospitals. Fewer cases from the urban areas, females and those aged between 25 and 40 years visit private practitioners.



2.2.7.4 Type of treatment

Most mentally ill cases are treated with psychotropic pills (83.6%), counselling (27.3%) and injections (25.5%). Some of these patients are given 2 or more types of treatment simultaneously. The rural (46.4%), female (61.6%) and older cases are mainly given psychotropic drugs with some counselling.

2.2.7.5 Symptoms of mental illness

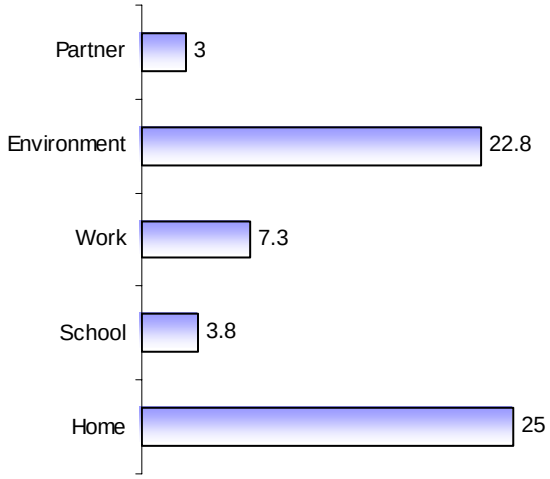
Mental illness is not easily disclosed in our society. It is still stigmatised. In order to ascertain on mental illness self-reported by respondents, they were asked to mention their experience of certain common symptoms of psychiatric illnesses. Dislike by others which is common with depression and hearing of voices and external power control which are peculiar to schizophrenia were explored.

Out of those diagnosed for schizophrenia, 10% usually take their own lives. Worldwide young age is highly at risk among those with the disease (Westermeyer et al, 1991). Approximately 25.0% of cases suffer from the mental symptoms of depression and schizophrenia, exceeding what is self-reported by 11 percentage points.

2.2.7.5.1Dislike by others

About a quarter of cases feel that parents do not like them at home followed by people in their environment, as depicted by figure 2.2.7.5.1. Urban (65.0%), female (50.2%) and older respondents (49.7%) feel that they are disliked at home. Rural (35.0%), males (44.1%) and youth cases (61.6%) feel that the environment hate them. Very few controls (0.2%) say that they are disliked by relatives at home.

Figure 2.2.7.5.1: Percentage distribution of cases by dislike by others



2.2.7.5.2Hearing of voices

Auditory hallucination is common among cases. They (20.9%) hear voices telling things (OR = 1.529, 95% CI = 1.047 – 5.902). Urban cases (25.4%), males (24.9%) and older cases aged between 25 and 40 years are likely to hear voices.

2.2.7.5.3External power control

Cases (24.9%) usually feel that an external power controls them (OR = 1.699, 95% CI = 0.999 – 7.786). Urban cases (52.5%), males (32.4%) and older cases (71.4%) are more likely to feel external powers controlling them.

2.2.7.6 Stressful events

Stressful events precipitate suicide. Among people with a history of drug abuse, mental disorder or previous suicide attempt, stress and crisis trigger suicidal behaviour (Beautrais, 1998).

Table 2.2.7.6: Percentage distribution of stressing elements

Stressing Element	Case	Control	Odds Ratio	Confidence Interval (95.0%)
Loneliness	5.7	0.3	1.115	1.040 – 1.334
Financial difficulties	10.5	5.4	1.567	0.997 – 2.041
Unemployment	9.6	7.2	1.231	1.020 – 1.421
Family disputes	31.5	10.4	1.494	1.422 – 1.578
Health problems	5.2	1.6	1.319	1.258 – 1.394
Battered wife	2.3	0.9	1.234	0.996 – 2.431

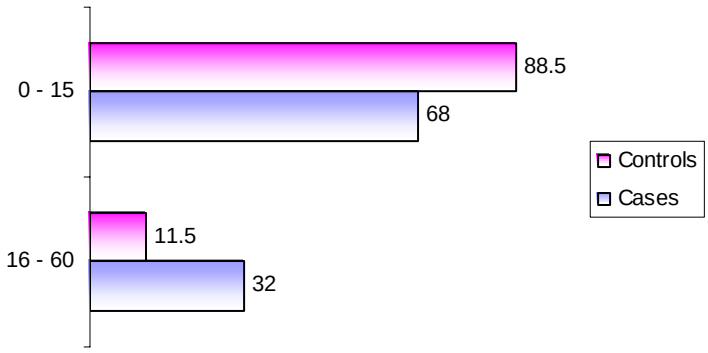
Cases (85.3%) are three times more likely to be stressed (OR = 3.015, 95% CI = 2.334 – 6.678). Family disputes and financial problems constitute the main stressing elements, as shown in table 2.2.7.6.

2.2.7.7 Depression

Depression is the most common mental disorder linked with suicide (Beautrais, 1998). But individuals who commit suicide generally have no history of mental illness although they show evidence of some psychiatric illness at the time of attempt. In the US, 90.0% of the 30,000 people who die of suicide yearly, suffer from depression (Sneidman, 1995). This condition becomes dangerous when associated with hopelessness or helplessness.[7] This means that many people with depression still go undiagnosed. Hence, respondents were assessed for depression in order to confirm the illness at the time of attempt.

The Centre for Epidemiologic Studies (CES) of the National Institute of Mental Health (NIMH) of the US designed a 20-item scale to assess symptoms of depression in the general population. Leonore Sawyer Radloff studied the reliability and validity of the instrument and recommended its use. This instrument was used to assess depression among both cases and controls. The scores for items 16-20 were reversed to match the others which are all negative so that 0 = 3, 1 = 2, 2 = 1 and 3 = 0. Then a depression score was determined. The total score ranged between 0 and 60. If the total was 16 or greater, depression was present. This choice of cut-off point was consistent with literature (Radloff, 1997).

Figure 2.2.7.7: Percent distribution of depression scores



A score of 0-15 represents absence of depression whereas a score of 16-60 shows depression. Cases are four times more likely to be depressed (OR = 3.623, 95% CI = 2.651 – 4.964), as seen in figure 2.2.7.7. Rural cases (82.8%), females (54.6%) and those aged 25-40 years (50.4%) are more likely to be depressed. Administration of the depression scale showed an increase of depression by 7.0% compared with self-report of depression. This proportion may not be aware of being depressed.

Depression rarely results into suicide attempt. Hopelessness and helplessness aggravate the condition and the individual commits suicide (Sneidman, 1995). Certain factors are associated with depression as identified in this study. It seems that people cannot tolerate lack of affection. Despised by blood relations and friends are 16 times more likely and loss of prestige/self-esteem 12 times more likely to produce depressed or existing aggravate depression. In addition, disputes with partners and families are 5 times more likely to lead to

depression. While a previous suicide attempt is 5 times more likely, a mental illness is 4 times more likely to be related to depression, as seen in table 2.2.7.7.

Depression is a symptom. It is caused mainly by social problems as shown below. It is considered as a defence mechanism to deal with evolutionarily relevant stresses. It very often triggers suicidal behaviour when the individual uses less lethal means to harm themselves. These attempts use their behaviour as a cry for help. Suicidal behaviour is more often associated with other mental disorders than with depression and is more common among adolescents (Andrews, 2004).

Table 2.2.7.7: Co-variates of depression among cases

Variables	%	Odds Ratio	95% Confidence Interval	P<0.05
Low education	69.4	1.333	1.048 – 1.693	0.020
Unemployment	18.7	2.003	1.427 – 2.811	0.001
Physical abuse by adults	19.2	1.910	1.372 – 2.660	0.001
Sexual abuse by peers	7.0	2.076	1.201 – 3.588	0.010
Psychological abuse	24.4	2.078	.903 – 4.779	0.010
Suicide attempt	6.1	5.802	2.441 – 13.792	0.001
Parents commit suicide	5.9	3.052	1.548 – 6.019	0.001
Parents die	46.0	1.954	1.539 – 2.481	0.001
Parents incarcerated	10.5	1.820	1.282 – 2.584	0.001
Mental illness	3.2	4.449	1.518 – 13.041	0.004
Lost loved person	20.5	2.163	1.552 – 3.013	0.001
Loss of prestige	22.7	11.958	6.697 – 21.352	0.001
Financial problems	34.2	3.059	2.294 – 4.080	0.001
Fatal disease	2.4	2.686	.978 – 7.379	0.049
Despised by friends	17.5	14.189	6.862 – 29.342	0.001
Despised by blood relations	19.8	14.636	7.369 – 29.070	0.001
Family disputes	47.2	5.022	3.794 – 6.648	0.0001
Separated from parents	11.7	2.052	1.342 – 3.138	0.001
Disputes among parents	14.3	2.338	1.406 – 3.888	0.001
Critical parents	66.2	1.952	1.546 – 2.465	0.0001
Partners use drugs	43.6	1.807	1.280 – 2.551	0.001
Partners always dispute	18.9	6.519	2.742 – 15.219	0.0001
Argue/fight parents/spouse	66.2	2.287	1.981 – 2.640	0.001
Argue /fight in-laws	23.6	2.407	1.810 – 3.202	0.0001
Serious fight school/ workplace	12.8	1.893	1.366 – 2.625	0.001
Gang fight	6.7	2.512	1.430 – 4.410	0.001
Stealing	6.7	2.299	1.121 – 4.715	0.005
Attack people	2.9	2.517	1.035 – 6.120	0.010
Hurting people	14.9	5.271	2.912 – 9.543	0.001

2.2.8 Losses

Losses inherent to youth and adults constitute one of the serious risk factors for suicide (Rimafedi, 1999). Several types of losses are identified, as shown in table 2.2.8. Despised by blood relations and family disputes affect people most seriously.

Table 2.2.8: Percentage distribution of type of losses

Type of Loss	Case	Control	Odds Ratio	Confidence Interval (95.0%)
Physical disability	5.0	4.0	1.696	0.827 – 3.478
Serious accident in childhood	5.0	3.5	1.117	0.638 – 1.956
Parents death in childhood	42.5	37.2	1.249	0.978 – 1.596
Parents death in past 3 years	29.5	20.8	1.144	0.877 – 1.492
Loss of leved persons	20.0	14.1	1.520	1.109 – 2.084
Loss of prestige/ position/self-esteem	29.0	5.8	6.695	4.635 – 9.671
Failure in examinations	6.8	8.3	0.805	0.506 – 1.281
Financial problems	38.0	19.0	2.613	1.998 – 3.417
Fatal disease	2.8	1.3	2.234	0.941 – 5.335
Despised by friends	21.8	4.5	5.899	3.914 – 8.889
Despised by blood relations	26.3	4.3	8.019	5.325 – 12.076
Family disputes	60.3	18.9	6.515	4.986 – 8.511
Breaking of a love affair	22.8	8.8	3.063	2.183 – 4.298
Separated from parents during childhood	13.8	6.9	2.159	1.458 – 3.205

2.2.8.1 Physical disability

Physical disability carries inferiority complex and impairment of certain activities which, in turn, leads to suicidal behaviour (Deleo et al, 1999). These people think that they are too dependent on others and they are a burden to society.

Cases are slightly more likely to have physical disabilities. Rural cases (4.3%), males (4.9%) and youth (3.7%) are likely to have physical disabilities. This finding is consistent with literature worldwide which demonstrates physical disability as a problem among male youth.[2]

2.2.8.2 Serious accident during childhood

The experience of a serious accident during childhood leaves a mark of insecurity among individuals. This is aggravated by some physical disabilities . Such people feel that they are left over by society. They seldom experience of suicidal tendencies.

Cases are more likely to have met with serious accidents during childhood. Rural (5.3%), male (7.0%) and older cases (5.5%) are more likely to have met with serious accidents.

2.2.8.3 Parents death during childhood

The impairment of parent-child relationship during childhood through the loss of one or both parents frustrates young people who feel depressed. They manifest suicidal behaviour.

More cases have parents who died during their childhood. They are mainly rural (43.2%), female (48.6%) and older cases (44.7%).

2.2.8.4 Parents death

The break of a strong parental tie often leaves people desperate. More cases (29.5%) have parents who died in the past 3 years compared (OR = 1.144, 95% CI = 0.877 – 1.492). Urban (46.7%), female (29.9%) and older cases (30.2%) are likely to have lost blood relations in the past 3 years.

84.0% of cases have parents who died at ages above 30 years with 50.0% dying above 60 years of age. Many have grand parents (41.5%) followed by relatives (34.7%), fathers (11.0%), mothers (5.1%), brothers/sisters (4.2%), spouses (2.5%) and sons/daughters (0.8%) who died recently. Those who had parents dying below 50 years of age are highly affected.

2.2.8.5 Loss of loved person

Almost a quarter of cases loses loved persons (14.1%) (OR = 1.520, 95% CI = 1.109 – 2.084). Rural cases (20.6%), female (24.8%) and youth (24.2%) mainly lose loved ones. The loss of loved ones is painful and some people commit suicide under the spell of such loss (Karan, Mehta, 2000).

2.2.8.6 Loss prestige/position/self-esteem

A vast proportion of cases are six times more likely to lose prestige/position/self-esteem (5.8%) (OR = 6.695, 95% CI = 4.635 – 9.671). Urban (30.0%), male (30.6%) and older cases (31.7%) tend to lose prestige. The loss of prestige/ position/self-esteem accompanied by mental disorder or substance use involving financial loss pushes some people to end their lives (Lawson, 1999).

2.2.8.7 Failure in examinations

Literature report that many youth students who have high aspirations attempt suicide because they fail in examinations (Joseph, 2003). In this study, no such association is found.

Controls (8.3%) are more likely to fail their examinations (OR = 0.805, 95% CI = 0.506 – 1.281). Rural (7.1%), female (9.8%) and young controls (12.1%) are likely to fail their examinations.

2.2.8.8 Financial problems

Financial loss is viewed as a very serious matter by some people. Those who incur severe financial problems are twice exposed to suicide. (OR = 2.613, 95% CI = 1.998 – 3.417). Urban (38.3%), male (38.7%) and older cases (49.2%) most likely incur severe financial problems. De Leo et al (1999) identified loss of huge sums of money as an important cause of suicide more common among adults.

2.2.8.9 Fatal disease

Cases are twice as likely to experience fatal diseases (OR = 2.234, 95% CI = 0.941 – 5.305). Rural (2.9%), female (3.3%) and older cases (3.0%) tend to experience fatal diseases. Debilitating and life threatening conditions like HIV/AIDS are related to suicide attempts (Brent et al, 1993).

2.2.8.10Despised by friends

Cases are 5 times more likely to be despised by friends (OR = 5.899, 95% CI = 3.914 – 8.889). Urban (30.0%), female (23.4%) and youth (24.7%) cases are more likely to be despised by friends. There seems to be an association between being despised by friends and suicide.

2.2.8.11Despised by blood relations

Cases are eight times more likely to be despised by blood relations ((OR = 8.019, 95% CI = 5.325 – 12.076). Urban cases (51.7%), females (26.5%) and youth (26.3%) are mostly despised by blood relations. There is some evidence from twin and adoption studies (Roy et al, 1991) that separation between blood relations can lead to suicide among both young and old people.

2.2.8.12Family disputes

Cases are six times more likely to have family disputes (OR = 6.515, 95% CI = 4.986 – 8.511). Urban (70.0%), female (61.2%)

and older cases (61.3%) tend to dispute with families. A large number of studies have found that many people with suicidal behaviour tend to come from families characterised by dysfunctional circumstances (Gould et al, 1996). This observation holds true in this study.

2.2.8.13Breaking of a love affair

Cases are three times more likely to have a breaking love affair (OR = 3.063, 95% CI = 2.183 – 4.298). Urban (26.7%), female (22.9%) and young cases (29.8%) are liable to have a breaking love affair. Young people mostly get hopeless by the breaking of a love affair and show suicidal behaviour (Brent et al, 1993).

2.2.8.14Separation

Cases are twice more likely to be separated from their parents during childhood (OR = 2.159, 95% CI = 1.455 – 3.205). This separation is viewed as loneliness by children. In reality, there is a lack of love and guidance which is needed by growing children. Urban (20.0%), male (15.1%) and youth cases (16.7%) tend to be separated from their parents. Children who get separated from parents tend to adopt suicidal behaviour (Pennebaker, 1997).

2.2.9 Exposure to suicide via media

While cases (55.0%) are exposed to suicide through movies (OR = 1.034, 95% CI = 0.860 – 1.317) controls are exposed through Tv/videos (59.4%) (OR = 0.860, 95% CI = 0.675 – 1.097) and articles and books (39.3%) (OR = 0.651, 95% CI = 0.503 – 0.842). Rural (55.6%), male (60.0%) and older cases (60.1%) are likely to be exposed through movies. On the other hand, rural (58.9%), female (55.9%) and older controls (57.1%) tend to be exposed to suicide through Tv/videos.

2.2.10 Family relationships

People who experience negative functional family relationships tend to indulge in suicidal behaviour (Brent et al, 1996).

Family relationships were studied through place of living of cases/controls, family disputes and whether parents/family are critical of them.

2.2.10.1Living with parents

Several studies have shown that young people with suicidal behaviour are less likely to be living with their biological parents (Martin, 1996). But this is inconsistent with findings in this study.

Cases who live with parents are more likely to commit suicide (OR = 1.073, 95% CI = 0.843 – 1.365). Rural (54.7%), male (62.9%) and youth (74.2%) cases are likely to live with parents.

2.2.10.2Family disputes

Cases whose parents always dispute tend to commit suicide. Most of the times, these people commit suicide under the

spell of anger. (OR = 1.153, 95% CI = 1.083 – 1.282). Conflicting family relationships tend to favour suicidal behaviour (Brent et al, 1996).

2.2.10.3Parents/family critical

Cases tend to have parents who are twice more critical towards them (OR = 2.258, 95% CI = 1.745 – 2.922). Urban (80.0%), male (73.1%) and young (72.7%) cases have critical parents/ family. Again, this attitude of parents is understood as hatred towards children. Many cannot cope with it and manifest suicidal behaviour.

2.2.11 Marital relationships

Marital relationships are identified through the type of marriage, the relationship between partners and relationship with in-laws. It is well documented that unstable marital relationships bring conflict and suicide tendencies (Gould et al, 1995).

2.2.11.1Type of marriage

Marriages taking place through consent/love (62.4%) are more likely to generate conflict which leads to suicidal behaviour among cases (OR = 1.881, 95% CI = 0.622 – 2.249). 59.6% of rural, 65.6% females and 81.8% youth marrying through consent/love tend to attempt suicide. Love marriages are very often opposed by parents and relatives. These couples tend to be despised by relatives/parents and very often suicidal thought results.

2.2.11.2Relationship between partners

Many a times people get highly involved in emotions as a result of frequent disputes between partners. This may lead to suicidal thought.

Disputes between partners are more common among cases (2.1%) (OR = 1.082, 95% CI = 1.045 – 1.168). Urban cases (66.7%), males (85.0%) and youth (39.3%) cases are likely to dispute with partners.

2.2.11.3Relationship with in-laws

Conflict with in-laws triggers suicidal behaviour (Rajan et al, 2000). Cases are more likely to dispute with in-laws (OR = 1.142, 95% CI = 1.087 – 1.233). Rural (35.8%), female (41.5%) and youth cases (37.5%) tend to dispute with in-laws.

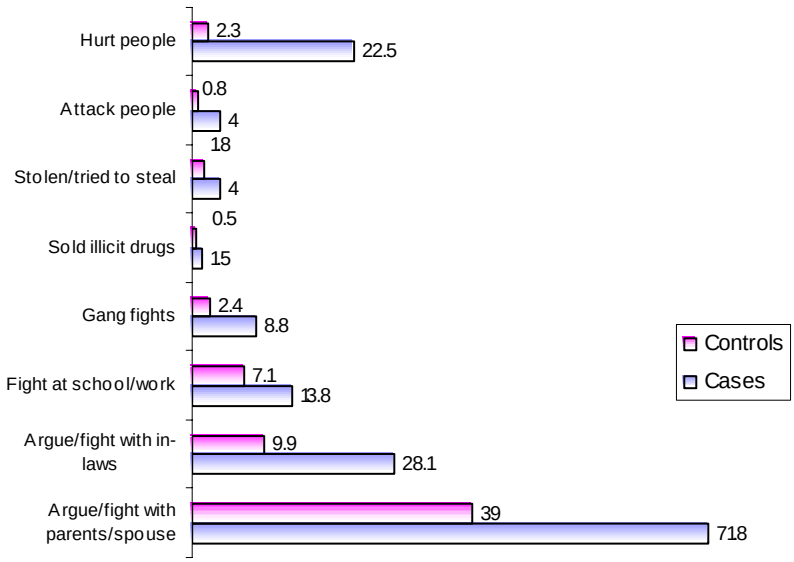
2.2.12 Change in social activities

People, in times of intense difficulties, very often like to be left alone. Their absence in society is remarkable. Cases are more likely to have decreased their social activities (OR = 1.396, 95% CI = 1.304 – 1.517). Rural cases (39.1%), males (45.7%) and older respondents (42.7%) lessen their social activities. This may show signs of depression or addiction to substance.

2.2.13 Unsocial behaviour

Cases are more likely to have indulged in unsocial behaviour during past 12 months, as shown in figure 2.1.13. Arguments/fights with parents and spouses and fights with in-laws are most common. Urban (81.7%), male (68.8%) and youth cases (72.2%) tend to argue/fight with parents/ spouses while rural (29.8%), female (37.7%) and older cases (34.0%) are most likely to fight with in-laws.

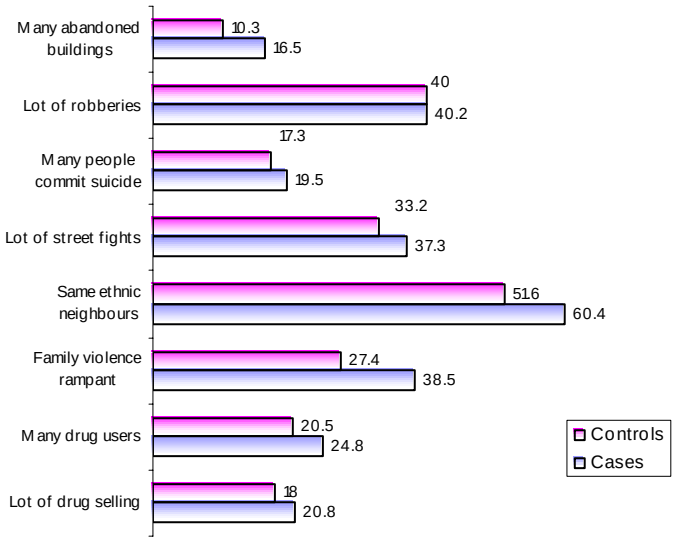
Figure 2.2.13: Percentage distribution of unsocial behaviour



2.2.14 Adverse environment

Cases are more likely to live in adverse environments, as seen in figure 2.1.14. Family violence, drug selling, lot of crime and lot of robberies tend to be associated with suicide attempts. When same ethnic groups live together, there is a greater likelihood for people to indulge in unsocial behaviour. This behaviour generates stress and hence people are most likely to commit suicide.

Figure 2.2.14: Percentage distribution of adverse environment elements

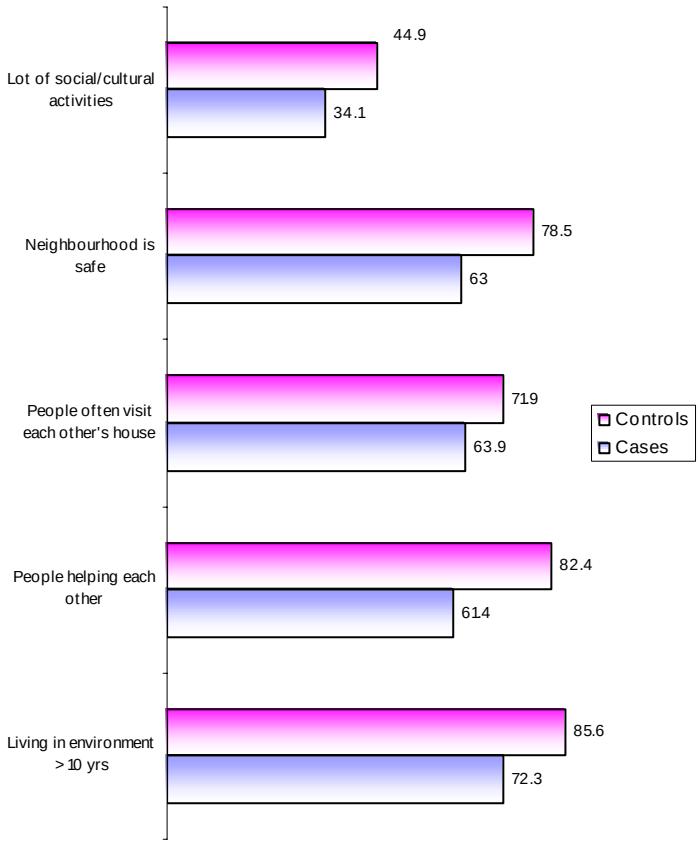


2.3 Protective Factors

Connectedness to family and school, family communication patterns, presence of a significant other like an adult for a young person and a spouse or a partner, personal resilience and problem-solving skills, good physical and mental health, community and social integration, early identification and appropriate treatment of psychiatric illness and lack of access to suicide means are protective factors related to suicide (Beautrais 1999, De Leo 1999).

2.3.1 Positive environment

Figure 2.3.1: Percentage distribution of elements of positive environment



A positive environment is identified by elements like living longer (>10 yrs) in an environment, people helping each other, people often visiting each other's house, a safe neighbourhood and the regular organisation of social/cultural activities. Controls are more likely to come from environments where people live for more than 10 years and help each other, as shown in figure 2.2.1. While urban (86.4%), male (76.9%) and controls aged 25 to 40 years (89.4%) are likely to live longer in an environment, rural (86.0%), female (88.2%) and older controls (80.0%) tend to come from places where people help each other.

2.3.2 Parental communication patterns

Parental communication patterns are determined through parents/family showing concern for the feelings and problems of respondents and the identification of people who support them. It is recognised that a well integrated family produce well-bred offspring.

2.3.2.1 Parents/family showing concern for feelings and problems

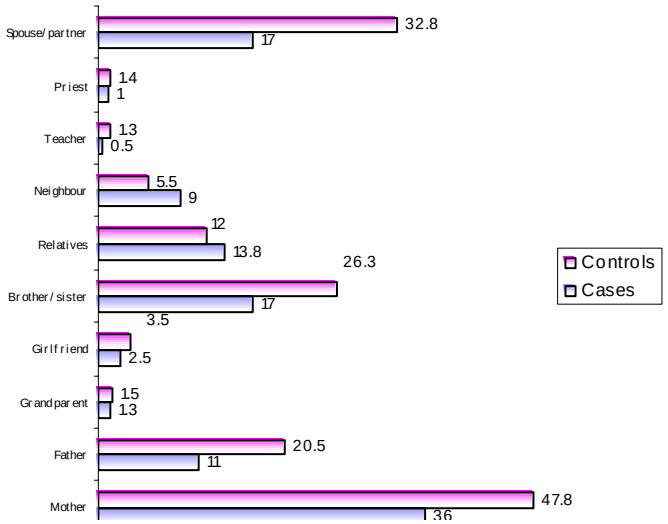
Parents/family of controls (87.8%) are more likely to show concern (OR = 1.761, 95% CI = 0.540 – 1.873). Urban (87.6%), male (88.2%) and youth controls (88.4%) have parents/family showing concern for their feelings and problems.

2.3.2.2 People with whom serious problem discussed

Cases are likely to discuss their serious problems with people other than blood relations like relatives (13.8%) and neighbours (9.0%) in addition to 10.0% who do not discuss with anyone. This may explain for their likelihood to commit suicide. They are mostly rural (90.6%), female (86.4%) and older cases (66.9%).

On the other hand, controls are more likely to discuss their serious problems with their mothers, spouses/ partners, brothers/sisters and fathers, as shown in figure 2.3.2.2. Urban (43.0%), female (53.1%) and youth (63.2%) controls are more likely to contact their mothers while rural controls (20.5%), males (30.4%) and youth (24.7%) contact fathers.

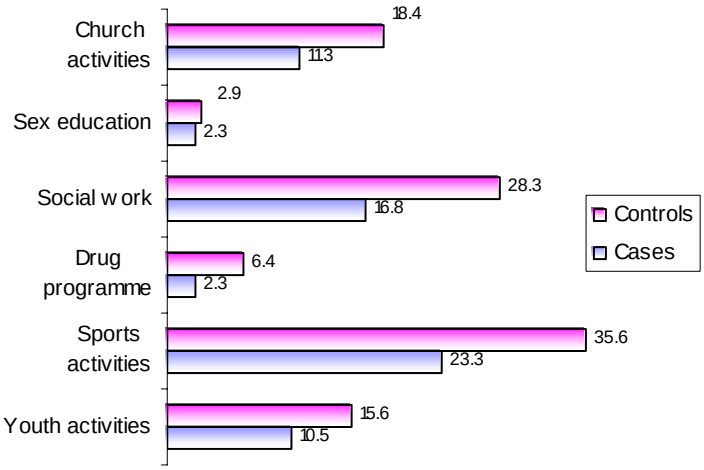
Figure 2.3.2.2: Percentage distribution of people with whom seious problems discussed



2.3.3 Social activities

Controls are more likely to participate in social activities with a higher participation in sports activities, social work and church activities amongst others, as seen in figure 23.2.3. Urban controls (38.0%), males (57.3%) and youth (43.3%) are more likely to participate in sports activities.

Figure 2.3.3: Percentage distribution of social activities



2.3.4 Early identification/treatment of mental illness

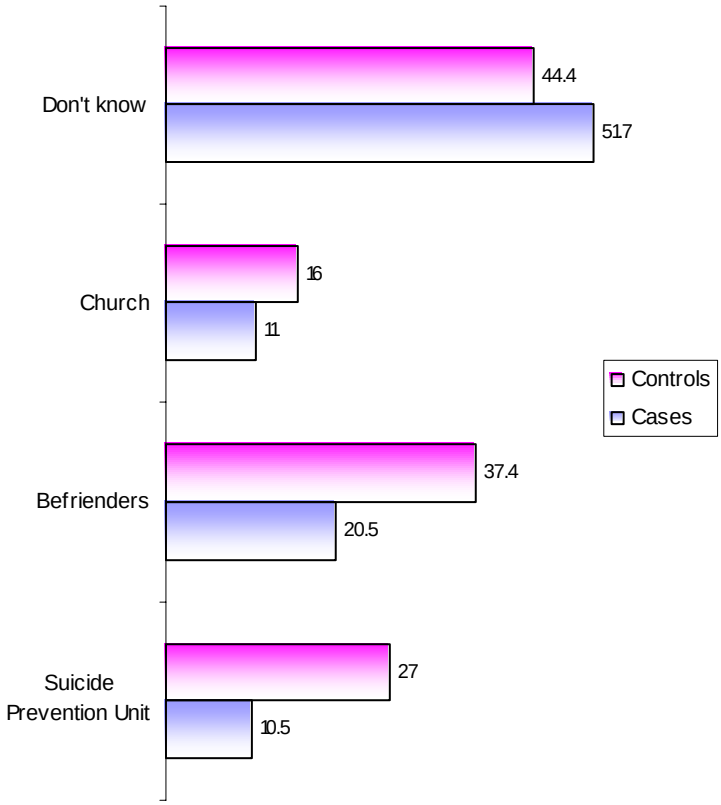
Cases are more likely to seek help for psychological problems (OR = 9.611, 95% CI = 5.061 – 12.253). They are mostly urban cases (8.5%), males (12.4%) and youth (14.2%). Very few controls (2.5%) have psychological problems. So, few seek help. Such problems are common among cases. Hence, more of them seek help.

Among those who seek help for a psychological problem, anxiety (93.3%) is most common followed by insomnia (35.2%), depression (21.2%) and epilepsy (18.9%). Urban cases (50.0%), males (87.5%) and youth (90.0%) are both more anxious and depressed.

2.3.5 Knowledge/use of support/service

Controls are more likely to know the existence of support services for people with suicidal tendencies (OR = 1.736, 95% CI = 1.575 – 1.936). Urban controls (20.4%), males (31.6%) and older respondents (21.6%) are likely to know of these services. Cases (51.7%) are more likely not to know where any such service is offered. However, Befrienders followed by the Suicide Prevention Unit are better known to controls, as shown in figure 2.2.5. Urban (47.5%), male (46.8%) and older controls (40.6%) are more likely to know of Befrienders. On the other hand, the Suicide Prevention Unit also is popular among urban (30.0%), males (33.3%) and older respondents (28.6%). Controls (98.5%) are more likely to have contacted such services compared with cases (64.7%) (OR = 1.087, 95% CI = 1.024 – 1.322). Out of those who attend these services, controls (50.0%) are more regular than cases (20.0%).

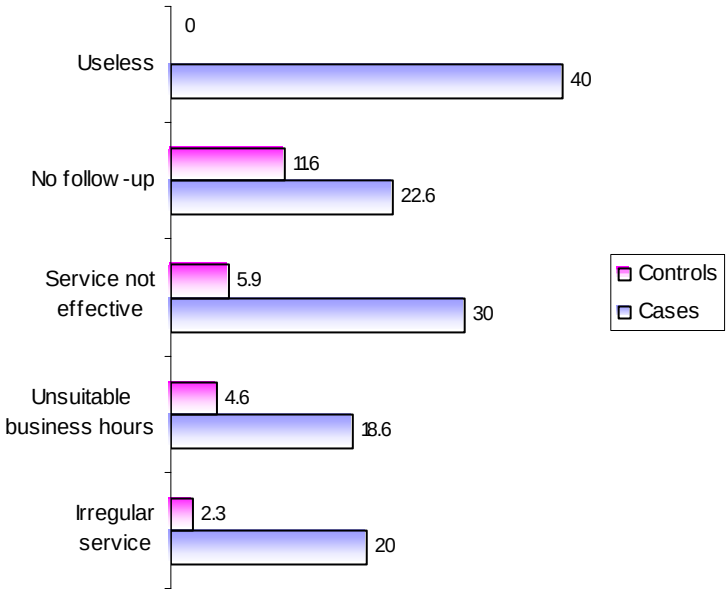
Figure 2.3.5: Percentage distribution of service points



2.3.6 Quality support/service

Cases are more likely to rate a negative picture of support/services than controls. The uselessness and ineffectiveness of the services and no follow up are common qualities of the services rated by cases, as seen in figure 2.2.6. On the other hand, no controls find the services useless.

Figure 2.3.6: Percentage distribution of quality support/service



3. DISCUSSION/CONCLUSIONS

The findings are discussed in relation to the risk and protective factors with reference to the study on suicide of 1997, where appropriate. Other factors have been added to prior attempts/deliberate self-harm, mental illness, socioeconomic problems and substance abuse as main explanatory factors for suicide in Mauritius. As identified by Hassan in Australia (1995), this study has also seen child abuse, dysfunctional families and breaking of a romantic attachment as factors in Mauritius.

Few people with a higher level of education commit suicide. This shows that a higher level of education is protective of suicide. On the other hand, about a quarter of suicide attempts is unemployed compared with 30.0% in 1997. Unemployment is less pronounced as a risk factor in 2005. However, the 25.0% rate of unemployment is an important risk factor among attempts national rate of unemployment of 8.5%.

Abused children commit suicide either during childhood or later in life. Physical abuse by adults exerts a stronger pressure on children than sexual and psychological abuse. More physically abused children commit suicide. Emotional abuse has the least influence like children affected by the incarceration of parents. However, child abuse is a crucial risk factor affecting almost a quarter of suicides attempts although there is a lower proportion (16.4%) of children in Mauritius.

Addiction of parents to alcohol is associated with suicide. Parents of cases are addicted to alcohol. The use of cigarette, alcohol and illicit drugs by partners and their getting high frequently make people close to them miserable. Many think of suicide. In addition, the use of illicit drugs by peers exerts a high influence on cases to use drugs. Naturally, the use of alcohol and illicit drugs by cases is highly risky. Drug users tend to be frustrated and depressed and they end up in suicide. Alcohol use among cases increased by to 28 percentage points from 1997 to 2005. The use of illicit drugs is also increasing. Hence suicide rate induced by substance abuse is likely to increase.

Previous suicide attempt is a strong predisposing factor for suicide. Previous attempt rates exceed those of the 1997 study by 19 percentage points. Cases mostly have a history of suicide attempts in substantial proportions during childhood. So do many of their blood relations, parents, friends and colleagues during childhood. Children internalise this behaviour which they see as a solution to problems. They imitate parents and peers. This attitude accounts for many previous suicide attempts among cases. So, previous suicide attempts during childhood emerge as an important factor.

Once someone attempts suicide, there is a high probability for other attempts. This accounts for about 95.0% of cases to have ever attempted 1 to 2 times. In addition, they do so in a short lapse of time. Over

75.0% do so within 2 years. Some also signify their intent for suicide. Almost one fifth of previous attempts signify their intentions. Most of them tell people in their homes, the place where problems arise and where they commit the act. Communication of intent slightly increases from 34.0% in 1997 to 35.6% in 2005. The formulation of the intent of suicide hints the planning of suicide. One fifth of attempts plans to commit suicide. This proportion exceeds the international rate of 12.0% by 5.0%. It is also a cry for help. These people do not want to die really. They expect support from other people. In both instances, the planning and the signal of distress should be given due attention.

Most suicide attempts use soft methods like absorption of poison or overdose of prescription drugs. The absorption of poison decreased by 7 .0% from 1997 to 2005. The use of soft methods confirms the absence of a firm desire to die and agrees with the impulsive attempt of suicide. Attempts use available methods at the time of high impulsion. They use agricultural chemicals. Had they planned their act, they would have chosen more lethal means as they would have really made up their minds to die. Restriction on the availability of these readily available methods may lower the incidence of suicide.

Literature worldwide shows that mental illness contributes largely to suicide attempt. In this study, although the risk for mental illness and suicide attempt increases with time, the rate of mental illness decreased by 79 percentage points from 1997 to 2005. Depression (32.0%) and schizophrenia (25.0%) mostly influence suicide attempt as mental illnesses. The rate of schizophrenia (25.0%) has remained stable since 1997 but exceeds the international rate by 15.0%. The rate of alcoholics decreased from 50.0% in 1997 to 14.3 % in 2005 and that of anxiety from 14.0% to 8.5%. This shows that mental illness as a risk factor is deceasing. Furthermore, the cases of mental illness are not so serious. The patients are mostly treated as out patients with oral pills and counselling in regional and district health care points. Despite that, they commit suicide. So, treating only mental illnesses is insufficient. Other problems should be considered. It is well documented that one who encounters a single problem will rarely commit suicide. The probability increases if the existing mental illness adds to an incoming problem. Many of those with mental illness use substance, thus increasing the risk of suicide. But substance abuse mostly act as a confounding variable to mental illness(Gould, 1996). Symptoms which appear to be those of mental illness may be due to illicit drug use.

However, in this study, cases advance family disputes, love breakdown and female mistreat as important causes of suicide. Stress also appears as an important factor mainly triggered by family disputes. Cases are 3 times more likely to be stressed by family disputes. Family dispute again emerges as the main

destructive agent. Financial difficulties and unemployment accentuate this stressful picture. Furthermore, undiagnosed depression worsens the situation. Despised by blood relations/friends and loss of prestige/position/self-esteem also instigate suicide. These elements generate loneliness. Loneliness seems to produce despair which leads to suicide. This feeling is precipated into action by the exposure to suicide either through movies or Tv/videos. People seem to find a way out of their loneliness through suicide. Giving attention to stress and loneliness can avert suicide.

Many cases attempt suicide because their parents always dispute with them and are critical towards them. Furthermore, marriages taking place through consent/love tend to generate disputes among partners and hence imbalance in the family. This proportion is large enough to be given due consideration. In addition females tend to dispute with their in-laws, leading to instability among partners and the family. This shows a substantial rate of family dysfunction whereby fights with parents, spouses and in-laws are common. According to estimates, 6.0% of the population are affected.

Fights also progresses outside the family. Fights at school/work and gang fights are common. They appear as precursors to suicide attempt. An environment where there are robberies, family violence, street fights, drug users/sellers and criminal offences generates insecurity. This atmosphere frustrates many people who tell others that they are fed up with life and will commit suicide.

So, in the nutshell, the main risk factors associated with suicide are:

- Socio-economic disadvantage characterised by a low level of education and unemployment.
- Childhood trauma caused by physical, sexual and psychological abuse.
- Substance abuse by parents, peers and suicide attempts.
- Previous suicide attempt or deliberate self-harm.
- Mental illness mainly characterized by depression and schizophrenia.
- Losses which are mainly financial, parental and prestige/self-esteem.
- Dysfunctional family atmosphere.
- Conflicting marital relationships.
- Adverse environments where there are lots of crimes, robberies, fights, drug selling and drug use amongst others.

In contrast, people who live longer (>10 yrs) in an environment tend to help each other. They visit each other's home regular. A tie of friendship develops and the environment becomes safe where social and cultural activities are organised. In such context, people are less likely to become desperate and commit suicide.

In addition, parents/families who show concern for the feelings and problems of their members bring support, comfort and love to those in difficulties. A large majority of the controls have relatives who

show concern for them. Problems are discussed with elders in the family, mostly with heads of families like mothers, fathers and spouses. These situations largely limit destructive measures among people in difficulties.

It is well documented that mental and physical health improves when the individual participates in social and cultural activities. This is congruent with the findings of the study. Controls have a lower rate of suicide attempts as they spend much time in sports and social activities. Stressful people who participate in certain types of activities keep themselves busy and thus they refrain from having negative thoughts. In addition, seeking help for psychological problems like anxiety and depression averts complications and disappointment. In such conditions, physical exercises and social activities are much helpful. Controls participate in such activities and seek help for psychological problems at an early stage. Hence, the rate of suicide is very low among them.

The knowledge of existing support for psychological problems is as important as the availability of these services. In Mauritius, about one third of suicide attempts know such services. A wider knowledge of such services might have shown a different scenario. Fewer cases might have attempted suicide. This is consistent with a higher proportion of controls who contact these services. However, some find the support/services useless and ineffective. The reliability of these ratings should be addressed in another study aiming at the evaluation of such services.

Hence, to conclude, the main protective factors of suicide are:

- Friendly/safe environment where people help each other.
- Social/cultural activities organisation in environment.
- Good parental communication.
- Parents/families who show concern for feelings of their members.
- Knowledge of existing support for psychological problems.
- Early treatment-seeking for psychological problems.

4. RECOMMENDATIONS

Worldwide, suicide claims one life every 3 hours. For every completed suicide there are around 30 suicide attempts.[1] In Mauritius, the rate seems to increase as well. Society has since long sought to discourage the practice. Society has seen suicide attempt as a serious signal for help or an indication for a need for psychiatric treatment.[37] Sociologists have shown that the common stimulus to suicide is intolerable psychological pain. Escape or release from the pain is sought through suicide. Such escape needs to be stopped. Hence, a national prevention strategy needs to be put in place for an aggressive campaign against this scourge. The study recommends some measures to that end. These recommendations aim at prevention at the primary and the post-suicidal levels.

4.1 Primary level – To reduce incidence of suicide

4.1.1 Monitor risk behaviour in the community.

4.1.2 Promote awareness of suicidal tendencies and conditions related to them.

4.1.3 Promote public policies to reduce access to commonly used methods of suicide.

4.1.4 Train personnel for suicide prevention programmes.

4.1.5 Educate public against stigma for substance abuse and mental illness.

4.1.6 Update information on suicidal trends should be compiled for the design of relevant and timely action plans.

4.2 Post- suicidal level - To target survivors of attempted suicide

4.2.1 Form suicide survival groups.

4.2.2 Help families of para-suicidal individuals to deal with attempts.

4.2.3 Deliver appropriate professional help to survivors of suicide.

4.2.4 Increase access to appropriate health and welfare facilities for survivors and para-suicidal people.

4.2.5 Encourage people with substance abuse problem, suicidal tendencies and mental illness to seek help.

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MIH