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NSRM
National Suicide Registry Malaysia

NATIONAL SUICIDE REGISTRY MALAYSIA

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c/o Department of Psychiatry and Mental Health

Hospital Kuala Lumpur

50586 Kuala Lumpur

Email: registry@nsrm.gov.my

Website: www.nsrm.gov.my

ATTENTION

These data is only for a six-month period, not a full calendar year, and therefore should be used advisedly.

The data represent absolute numbers and not rates and hence caution is advised before drawing conclusions from them.

In case of doubts, readers are advised to seek clarification from the Editors of this report. Written permission (addresses as above) should be obtained before quoting these data in any publication or presentation.

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And all who have in one way or another supported and/ or contributed to the success of the NSRM and the preparation of this report

Dato' Hj. Dr. Abdul Aziz Abdullah / Dr. Mohamad Shah Mahmood

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Ms. Suhailey Mohd. Noor	Institut Perubatan Forensik Negara
Ms. Kalai Vaniy Balakrishnan	Insitute of Health Behaviour Research
Ms. Nurini Fazilawati Shaharuddin	Clinical Research Centre

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	Ms. Kalai Vaaniy Balakrishnan

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INTRODUCTION:

About the NSRM

Until recently, Malaysia does not have official suicide rates. The National Statistics Department quoted figures as low as 1 per 100,000 suicides per year(Department of Statistics Malaysia 2003); while cross sectional research in different parts of the country suggested higher figures (Maniam 1988; Hayati, Salina et al. 2004). It is postulated that among the difficulties that had caused these discrepancies are: the degree of subjectivity in identifying a death of suicide, lack of structured data describing the 'manner of death' for cases of traumatic or non-natural deaths, and inconsistencies in the way terms are defined and data collected and coded.

In response to this, the National Suicide Registry Malaysia was officiated in 2007 to compile the census of suicidal deaths that occur in Malaysia via its network of forensic services. It is sponsored by the Psychiatric and Mental Health Services and the Forensic Medicine Services of the Ministry of Health Malaysia (MOH); while the Clinical Research Centre (CRC) provides the technical expertise. In 2008, the Institute of Health Behaviour Research has come on board to spearhead a platform for further research in this area. The NSRM is managed by a Joint Technical Committee comprising of the four agencies. Meanwhile, an Advisory Committee provides governance to ensure that the NSRM stay focused on its objectives and to assure its continuing relevance and justification.

Objective:

The National Suicide Registry Malaysia (NSRM) aims to create a nationwide system to capture data on completed suicide in Malaysia i.e. the rates, methods, geographic and temporal trends and the population at high risk of suicide. Data from this project will provide detailed statistics on suicide in Malaysia. This is important for health prioritizing and identifying of areas which health providers should focus on.

Inclusion criteria: Defining Suicide

In describing suicide, the World Report on Violence and Health quoted a well-known definition by Encyclopaedia Britannica (1973) and quoted by Shneidman (1981), i.e.: ''the human act of self-inflicting one's own life cessation" (World Health Organization 2002). It is obvious that in any definition of suicide, the intention to die is a key element. However, unless the deceased have made clear statements before their death about their intentions or left a suicide note, it is extremely difficult to reconstruct the thoughts of people who committed suicide. To complicate matters, not all those who survive a suicidal act intended to live, nor are all suicidal deaths planned. It can be problematic to make a correlation between intent and outcome. In many legal systems, a death is certified as suicide if the circumstances are consistent with suicide and if murder, accidental death and natural causes can all be ruled out. Thus, there has been a lot of disagreement about the most suitable terminology to describe suicidal behaviour.

The World Report on Violence and Health had commended the proposal to use the outcome-based term ''fatal suicidal behaviour'' for suicidal acts that result in death – and

similarly ''non-fatal suicidal behaviour[1]'' for suicidal actions that do not result in death (6). The NSRM had adapted this stance and are registering cases which are classified as **fatal intentional self-harm**. These codes are covered in Chapter XX of ICD-10[2] i.e. External Causes of Mortality and Morbidity (codes X 60-X 84) (World Health Organization 2007). The diagnosis will be based on a post-mortem examination of the dead body and other supporting evidence that shows a preponderance of evidence indicating the intention to die.

Instrument:

Data is collected via a structured Case Report Forms (CRF). The technical committee had reviewed the literature and collected the views of prospective participants before determining the final design of the CRF. The committee had also prepared an instruction manual (hard and soft copies) alongside the CRF to ensure systematic and efficient data collection. With due regard to the sensitive nature of data acquisition (Reiget 2001), a specific chapter had been dedicated to the techniques of interviewing the grieving family members. Regional and national-level training has also been carried out to enhance the competence and capability of officers involved in this project, as listed below:

State/ Zone	Date	Venue	No. of Hospitals represented	No. of Partici-pants
Perak	6 April 2007	Hospital Bahagia Ulu Kinta	16	35
Central	14 Mei 2007	Hospital Serdang	17	36
North	7 Jun 2007	Hospital Sultanah Bahiyah Alor Star	15	36
South	11 Jun 2007	Hospital Sultanah Aminah Johor Bahru	11	25
East Coast	14 Jun 2007	Hospital Kuantan	22	51
Sabah	18 Jun 2007	Hospital Queen Elizabeth	16	30
Sarawak	19 Jun 2007	Hospital Umum Sarawak	17	29

Training sessions were on recognition of cases, developing standard operating procedures to capture the data, interview techniques and practical sessions in filling out the CRF. Despite our best efforts, there were limitations in the programme outreach and this is discussed in detail at the end of the report. For more detailed information on the variables, please visit our website at www.nsrm.gov.my

Data Flow Process:

The registry will be coordinated at the central data management unit i.e. the Suicide Registry Unit (SRU). At the state level, there is a separate data collection effort coordinated by the State Forensic Pathologists' office. The officer in charge for each state is known as the "State Coordinator". The State Coordinator will identify staffs from the forensic unit of other hospitals in their state to handle data collection at the district level. All hospital that carry out data collection will be categorized as a Source Data Producer (SDP).

[1] Such actions are also often called ''attempted suicide'' (in the United States of America), ''parasuicide'' and ''deliberate self-harm'' (terms which are common in Europe)
[2] The International Statistical Classification of Diseases and Related Health Problems version 10

The SDPs had developed an alert system to identify cases. Data was collected via interviews with the family members, significant others or police; as well as from the review of medical records or other official documents. The relevant variables were recorded in the paper-based CRF.

The Registry Manager based in the SRU tracked data returns and prompted State Coordinators to submit data whenever they fall behind schedule in reporting data. Data protection procedure had been put in place, following standard disease registration practice, and in compliance with applicable regulatory guidelines.

Progress

Data collection began in July 2007. There were some problems due to loss of forms in the mail and delay resulting from late verification of cases. In view of that, an online registration system had been developed beginning October 2007. Data collection in 2007 was also limited to hospitals under the purview of the Ministry of Health. However, in 2008, efforts have been made to invite forensic departments in university hospitals to participate in this registry.

Data will be reported in collapsed figures or trends, and will not give details of the individual. Real-time brief reports will be available for the state forensic physicians via the NSRM's official website www.nsrm.gov.my, while more detailed queries will have to go through the advisory committee. Meanwhile, annual reports will be produced to give a clearer picture of national trends.

1. DISTRIBUTION OF CASES ACCORDING TO STATES

The population of Malaysia in 2007 is estimated to be 27.17 million with Selangor having the highest population, i.e. 4.96 million (18.3%) followed by Johor; 3.24 million (11.9%) and Sabah; 3.06 million (11.3%). States with less than one million population are Negri Sembilan (0.98 million), Malacca (0.74 million), Perlis (0.23 million) and Federal Territory Labuan (0.09 million).

The prevalence of suicide is reported as "suicide rates per year" of a given population. The suicide rate per year is the number of residents' suicidal deaths recorded during the calendar year divided by the resident population (Centers for Disease Control and Prevention 2003), as reported in the official Malaysian National Statistics Department census figures, and multiplied by 100,000 (Centers for Disease Control and Prevention 2003). As mentioned earlier, data collection in 2007 only began in July – thus data was for 6 months only and could not be used to generate suicide rates.

Notwithstanding that, the number of cases registered during this period was 113 - which may seem rather low. This may be due to the fact that events with indeterminate intent were not captured in this registry (adhering to the inclusion criteria which required evidence showing a preponderance of evidence for 'intention to die').

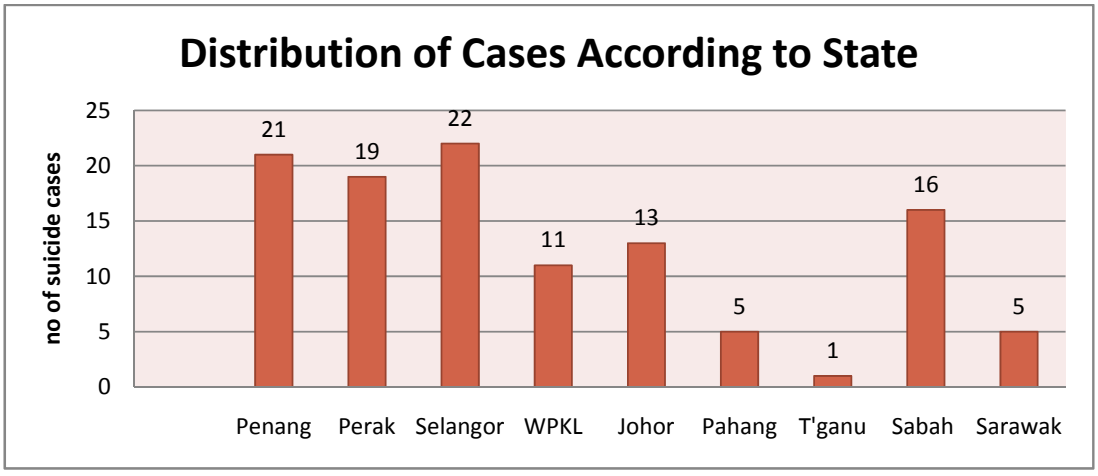

Figure 1: Distribution of suicide cases according to states[3]

Figure 1 shows the distribution of cases according to states. Data is not available for five states i.e. Perlis, Kedah, Negri Sembilan, Malacca and Kelantan. It needs to be emphasised here that the NSRM was officiated in early 2007, and this data collection is a very early attempt. Most of the problems in data collection were related to manpower, as follows:

- There were no designated paramedical staffs to handle the Forensics Unit in the district hospitals; they were usually 'borrowed' from the Emergency Department.
- Non-availability of Forensic Physicians in certain states to coordinate the SDPs – which is the case in all five states which did not submit any data. Apart from providing leadership, the forensic physicians also need to verify the forms manually before they were returned to SRU

[3] Data for Wilayah Persekutuan Kuala Lumpur (WPKL) is contributed by Hospital Kuala Lumpur only

- Rapid staff turnover - some of those already trained had been promoted and transferred elsewhere

There had also been logistics problems, for example: SDPs did not receive the Case Report Forms (CRFs) which were sent by the Suicide Registry Unit (SRU) via mail – this was especially so in East Malaysia; usage of non-official formats instead of the CRF to register cases and loss of completed CRFs in the mail. Other problems which hampered the interview process include the lack of informants and shortage of interview areas.

The development of an online registration system will hopefully address some of the above problems. Firstly, it will provide more convenience for Forensic Physicians to verify cases even if they are outstation. The system can also auto-generate some basic data and these will be available real-time; and can be used to disseminate information and other teaching material to the SDPs. However, as the internet capabilities varied widely among the different hospitals, there may be a necessity to provide mobile broadband capability to the respective states due to the frequent movement of the forensic physicians.

2. DEMOGRAPHICS

2.1 GENDER DISTRIBUTION

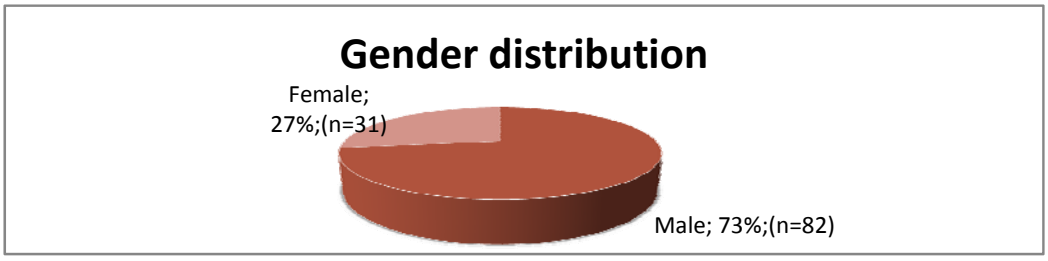

Figure 2: Gender Distribution of suicide cases

The gender distribution as shown in Figure 2 shows a preponderance of males, with a male to female ratio of approximately 3:1. This is consistent with international literature.

2.2 AGE DISTRIBUTION

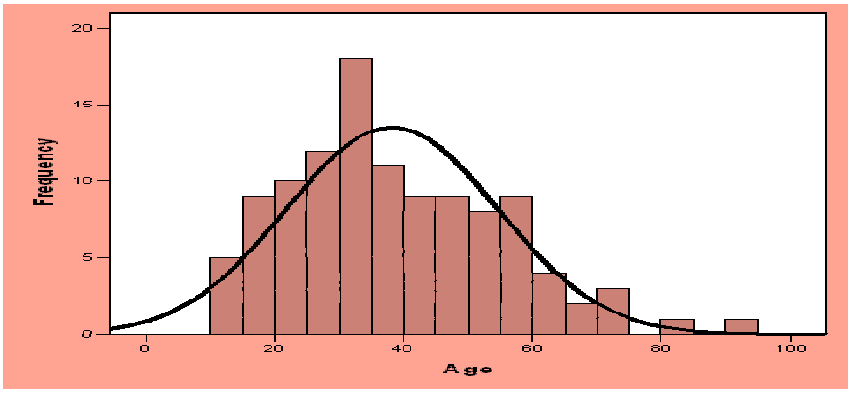

Figure 3: Age distribution of suicide cases

The age distribution is as shown in figure 3. Data is obtained for 111 cases, with the mean of 38.24 years; median of 35 years; and the mode of 30 years (multiple modes exist). The youngest case was 12 years of age and the oldest was 93 years.

2.3 ETHNIC GROUP OF MALAYSIAN CITIZENS

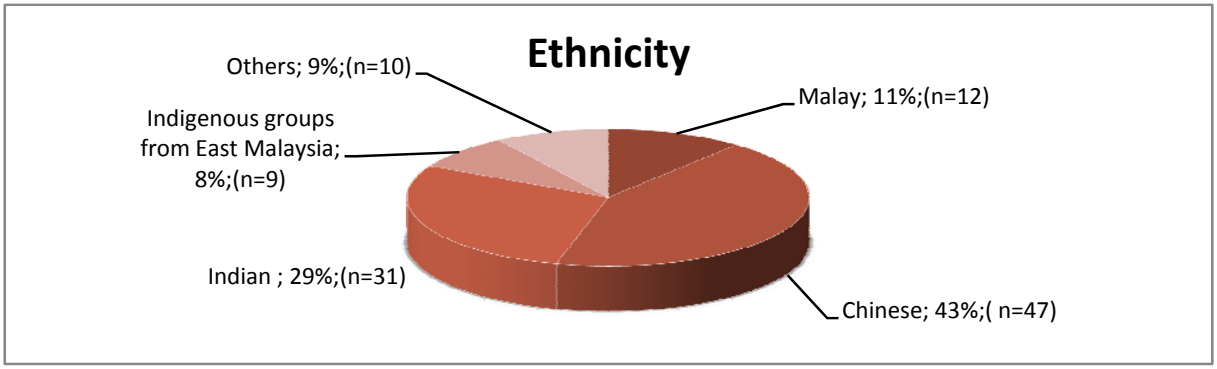

Figure 4: Distribution of ethnic groups of suicide cases

The mid-year population for 2007 showed that Malays and other Bumiputera groups made up 66.4% of the population, Chinese 24.9%, Indians 7.5% and others 1.3%. All states generally showed the same trend, i.e. bumiputera being the biggest group except for Penang with bumiputera and Chinese groups almost at par i.e. 44.2 per cent and 44.8 respectively.

In contrast, the figures collected by NSRM reported 11% for Malays, 43% for Chinese and 27% for Indians. This indicated an over-representation of the Indians and Chinese, which had been seen repeatedly in earlier studies.

2.4 CITIZENSHIP

Most of the suicide victims were Malaysians (87%, n=95), while foreigners contributed 13% (n=14) of suicides in Malaysia. Among these, the highest percentage was contributed by Indonesians (43%, n=6) followed by the Nepalese (22%, n=3) as shown in Figure 5.

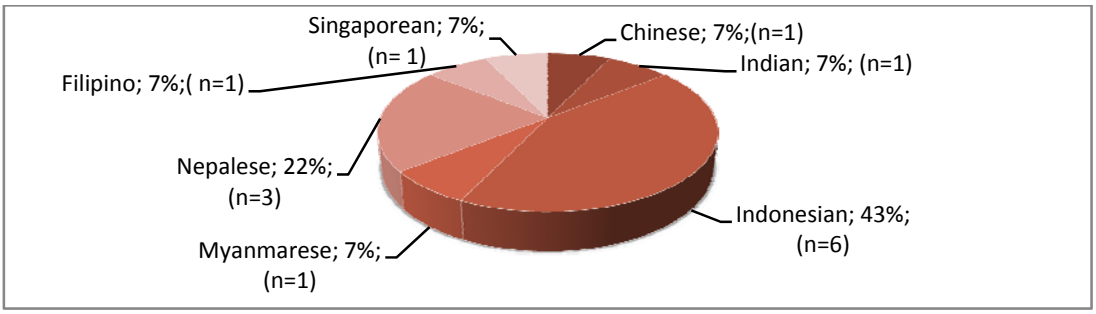

Figure 5: Distribution of country of origin for non-Malaysian suicides

In general, the sociodemographic profile of suicide victims was similar to previous studies. According to World Health Organization, the suicide rates worldwide for the year 2007 were consistently higher among males compared to females(World Health Organization 2008). The age group was also consistent with previous studies, where the predominant age group to commit suicide were among the young(**McClure** 2000). The ethnic distribution were similar to the findings from other local studies(Nadesan 1999; Hayati, Salina et al. 2004; Teo, Teh et al. 2008) where Indians were consistently reported to have the highest suicide rate.

2.5 MARITAL STATUS

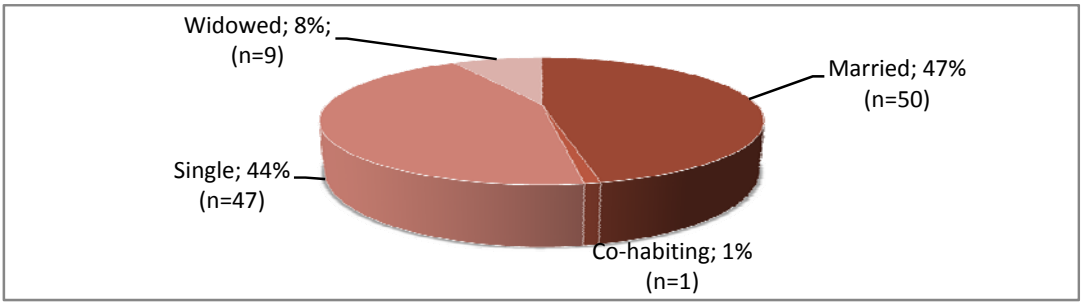

Figure 6: Distribution of marital status for suicide cases

Contrary to international literature, where suicide is usually committed by people who are single (World Health Organization 2002), the data showed that a significant number of married persons also committed suicide (51%, n=50).

Table 1: Gender comparison in association with marital status

	Married	Single	Widowed	Cohabiting	Missing Data	Total (gender)
Male	41 (50%)	31 (37.8%)	5 (6.1%)	0	5 (6.1%)	82
Female	9 (29%)	16 (51%)	4 (12.9%)	1 (3.2%)	1(3.2%)	31
Total	**50**	**47**	**9**	**1**	**6**	**113**

When gender-wise analysis was performed, an interesting difference between the sexes was observed. Married males contributed 50% (n=41) of suicidal deaths while single males contributed 38% (n=31). Meanwhile for females, a much higher proportion were singles (51.6%, n=16) as compared to those who are married (29%, n=9), as shown in Table 2. However, this association is statistically not significant (p>than 0.05). This trend needs to be observed on a longer term before any conclusions can be made about the association between gender and marital status amongst those who committed suicide in Malaysia.

2.6 EDUCATION LEVEL

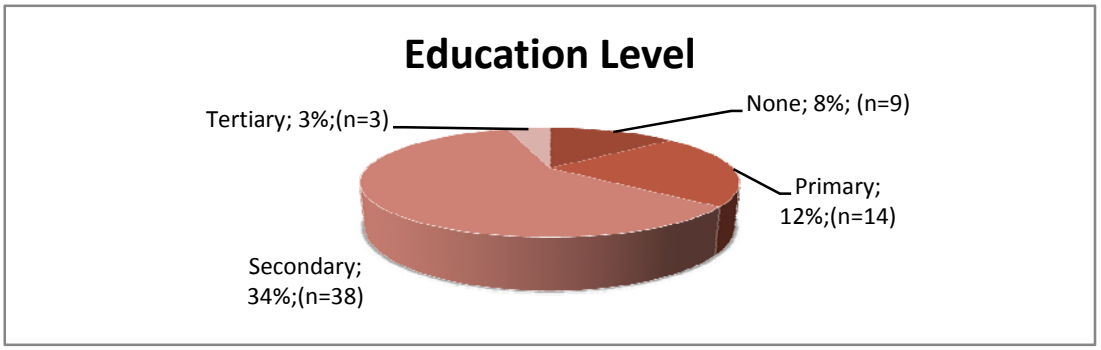

Figure 7: Education level of suicide victims

The education level was not known for 43% (n=49) of cases. For those whose education level was known, the majority had studied until secondary level. This is in-keeping with the national trends, where the average years of schooling is about 6.8 years or lower secondary level (UNESCO 2008).

2.7 EMPLOYMENT STATUS

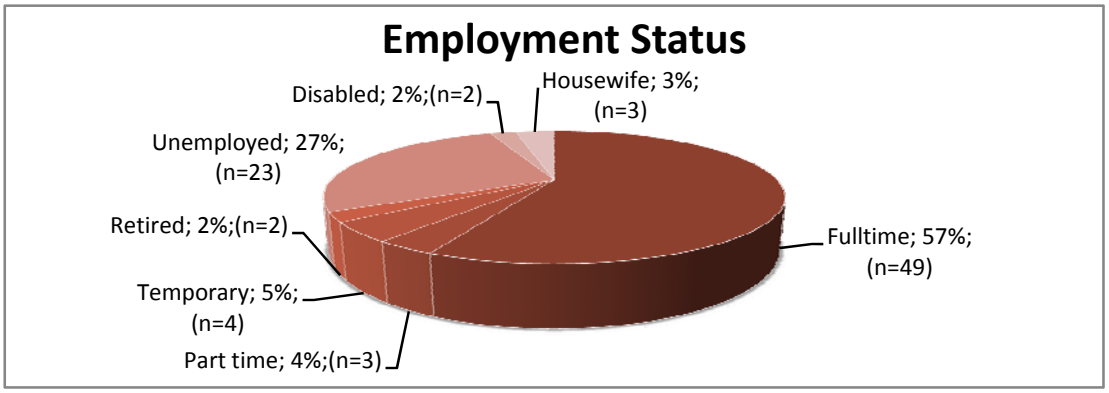

Figure 8: Employment status of suicide victims

Data on employment were available in 86 cases. The majority of suicide victims (57%) were fulltime-employed, while 27% were unemployed. The remainder were either part-time (4%) or temporarily- (5%) employed, 2% were retired, 2% were receiving disability pension while 3% were housewives.

2.7.1 Specific Employment

Specific employment was identified in 46 cases. The most common employments were students (n=9; 20%), 3 businessmen (n=3, 7%), drivers (n=3, 7%), labourer (n=3, 7%) and security guard (n=4, 9%). The other employments are as listed below.

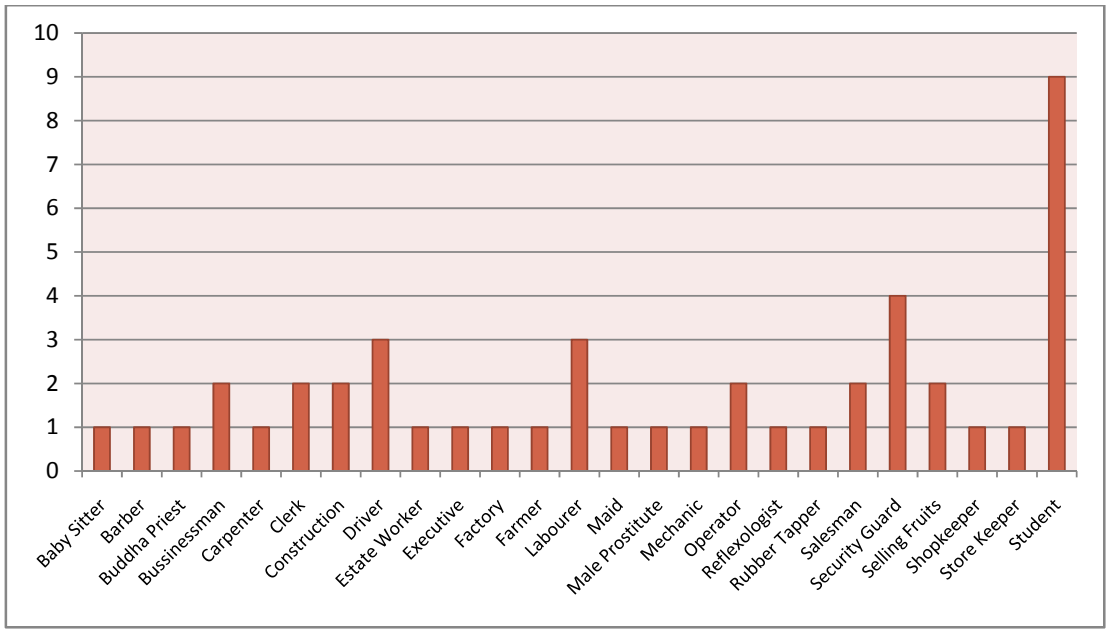

Figure 9: Specific employment of suicide victims

Of the 9 students, 6 were females and 3 were males. Only 1 was Malay, aged 22, while the others were 5 Indians, 2 Iban and 1 Murut aged 12 to 17 years. School problems were cited in two cases, intimate partner problems in another two while no life event was identified in five cases.

3. CHARACTERISTICS OF THE SUICIDAL ACT

3.1 PRESENTATION TO THE HOSPITAL

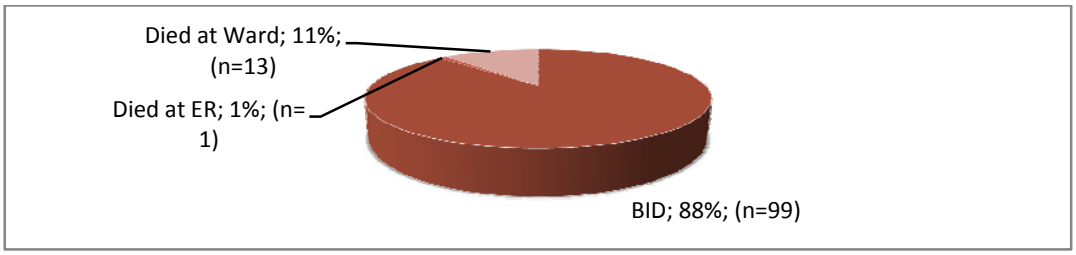

Figure 10: Distribution of presentation to the hospital for suicide cases

From 113 cases of suicide, 88% of the cases were "Brought in Dead" (BID) by the police for post-mortem examination, 11% of cases died in the ward and 1% died in the emergency department. Those who died in the ward and emergency department indicate that the person who committed suicide did not die immediately but went through the resuscitation stage/process. Most of the cases which were admitted to the ward had used poisoning methods. They do not die immediately and were sent to the hospital by their next of kin.

3.2 PLACE OF SUICIDE ACT

Table 2: Place where the deceased carried out the suicidal act

Place of Suicide Act	Frequency	Percent
Own Home (Including Girlfriend's Home [1], Neighbour [1])	73	64.6
Residential Institution	10	8.8
Farm / Plantation	5	4.4
Commercial Buildings/ Trade Service Areas	5	4.4
Industrial Area	3	2.7
Street / Highway	2	1.8
School	2	1.8
Police Custody	1	.9
Graveyard	1	.9
Unspecified Place	3	2.7
Missing Data	8	7.1
Total	**113**	**100.0**

A large majority of patients (64.6%, n=73) chose to commit suicide at home settings, as shown in Table 3. Residential institution is the next commonest place with a total of 8.8% of cases. Another 4.4% of suicidal acts took place at farm or plantation areas and commercial buildings or trade service areas. Other locations were industrial area, school, police custody, graveyard and street/highway. The most likely reason for people committing suicide at their own homes is probably due to the ease of access and the ensured privacy. It would be shown in the next section that the commonest life event precipitating suicide is an 'intimate partner problem' – and the home may be the setting where this problem is most intensely experienced.

3.4 CHOICE OF METHODS

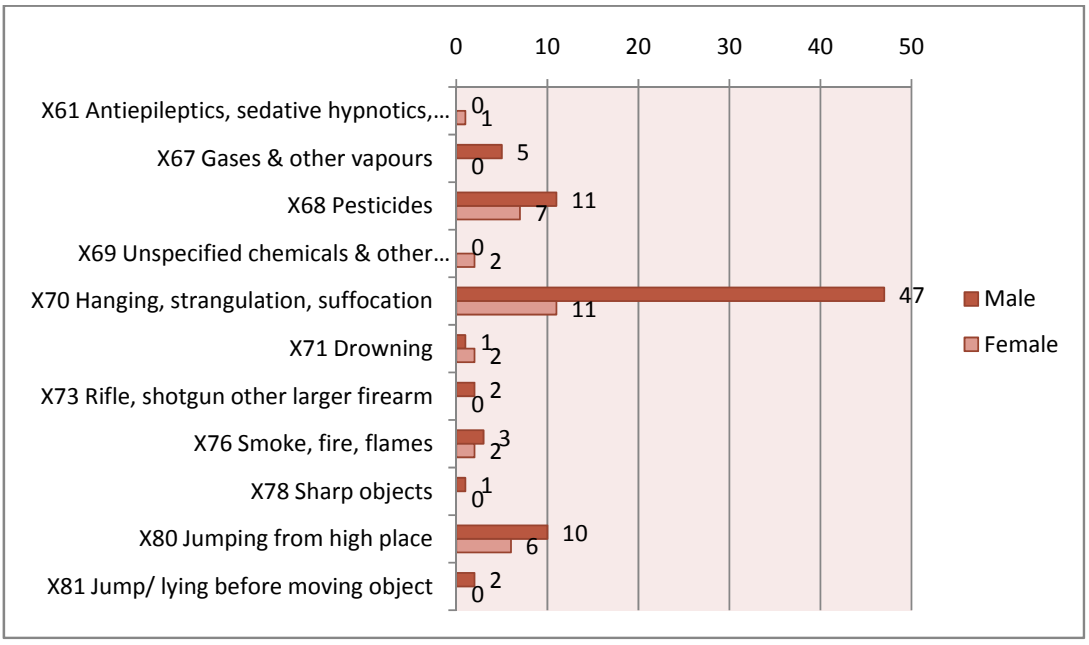

Figure 11: Gender comparison for choice of methods of suicide (N=113; males 82; females 31)

Methods of suicides for this study are according to the ICD-10 classification. This study showed that the most favoured suicide methods amongst Malaysian are hanging, strangulation and suffocation (X70). Both male and female favoured this method for suicide. As shown in a study by J.P Henderson et al(Henderson, Mellin et al. 2005), the majority of suicides were by hanging. Technically, it may also be the easiest method to be diagnosed. The second most widely chosen method is exposure to pesticide (X68), followed by jumping from height (X80) which contributed 14.16% of the suicide cases.

It is interesting to note that the female victims in this group of patients had chosen as lethal methods as the males. The accessibility of the method may have contributed to the preference. However, this trend should be observed in the coming years.

The other suicide methods found in the study were exposure to gases and other vapours (X67), smoke, fire, flames (X76), drowning (X71), exposure to unspecified chemicals & other noxious substance (X69), jumping or lying before a moving object (X81), sharp objects (X78), rifle, shotgun or other larger firearm (X73) and exposure to antiepileptics, sedative, hypnotics, psychotropics (X61).

3.4.1 Method vs. Ethnicity

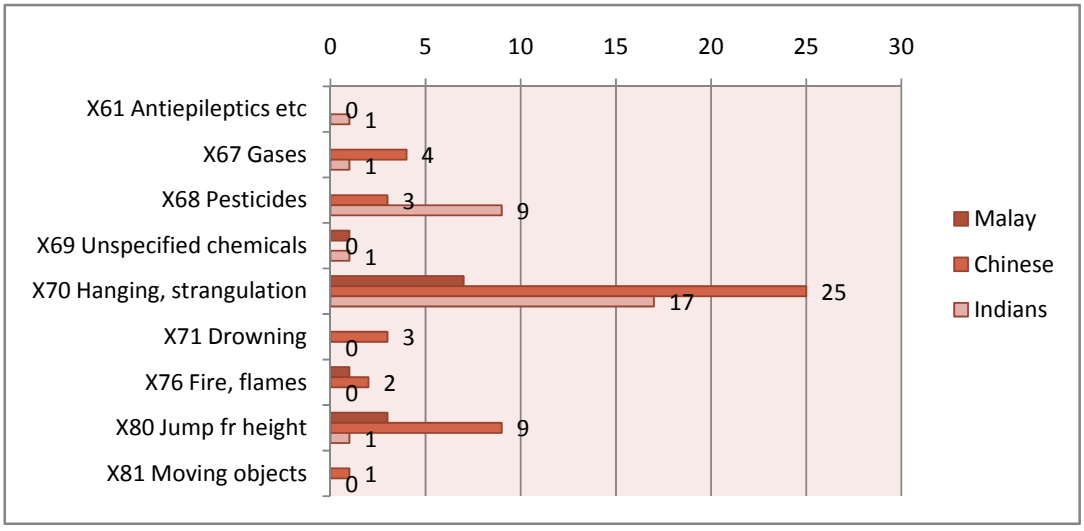

Figure 12: Ethnic comparison for methods of suicide

From table 3.4.1, the commonest method of suicide for all the major ethnic groups (Chinese, Indians and Malays) was hanging. This is probably due to the accessibility and efficiency of this method. The second most common method chosen by the Chinese and Malays was jumping from height, while Indians tend to use pesticide poisoning.

3.5 EXPRESSION OF INTENT – SPECIFY MODE

Among the 113 victims, only 20 (17.7%) had expressed the intent for suicide. The informants for 72 cases (63.7%) said that there was no indication of intent at all, while the remaining 19% were reported as unknown. For those patients who indicated their intent, the most frequent mode was via verbal expression (n=13; 11.5%) as shown in Table 4.

Table 3: Types of expression of suicidal intent

Indication of Intent	Frequency	Percent
Verbal Expression	13	11.5
Preparation	3	2.7
Suicide Note (Including 1 SMS)	3	2.7
Rehearsal	1	.9
None/ Unknown	93	82.3
Total	**113**	**100.0**

4. Risk Factors for Suicide

Examining suicide deaths retrospectively, 5 factors that appear to be most directly connected to suicide risk were listed in case report form. They are:

1. History of Previous Suicide Attempts
2. History of Substance Abuse
3. Physical illness
4. Mental Illness
5. Life Event

Many individuals share these risk factors without contemplating suicide. Because different individuals undergo these risk factors differently, no single risk-scoring system has been widely accepted within the mental health clinical community. Risk factors for suicide can be characteristics of an individual (being male, having a mental or physical illness, having a family history of suicide), situational (living alone, being unemployed) or behavioural (alcoholism/drug abuse or owning a gun). Mental disorders (especially mood disorders, conduct disorders, substance abuse and disruptive disorders), previous suicide attempts, family history of suicidal behaviour, and stressful life events are risk factors of suicide for both genders (Gould et al. 1996; Shaffer et al. 1996; Groholt et al. 1997, 1998; Brent et al. 1999; Beautrais, 2000).

Knowing the number of deaths in any given age group allows service providers to plan for the level of suicide-related services that may be needed, while understanding suicide death rates pinpoints the groups most at risk.

4.1 HISTORY OF PREVIOUS SUICIDE ATTEMPTS

Beck's theory states that previous suicidal experience sensitizes suicide-related thoughts and behaviours such that these ideas become more accessible and active. The more accessible and active these schemas and modes become, the more easily they are triggered and the more severe are the subsequent suicidal episodes (Teasdale, 1988). Previous studies have proven that multiple suicide attempts are a marker for severe psychopathology and psychosocial problems and hence is a strong predictor for suicide. Within the first 12 months after an episode of self-harm, risk of suicide increases fifty (Owens, 2002) to a hundred (Hawton 1988) times, compared to the general population. Approximately one-half of persons who die by suicide have a history of self-harm (Foster, 1997), and this proportion increases to two-thirds in younger age groups.

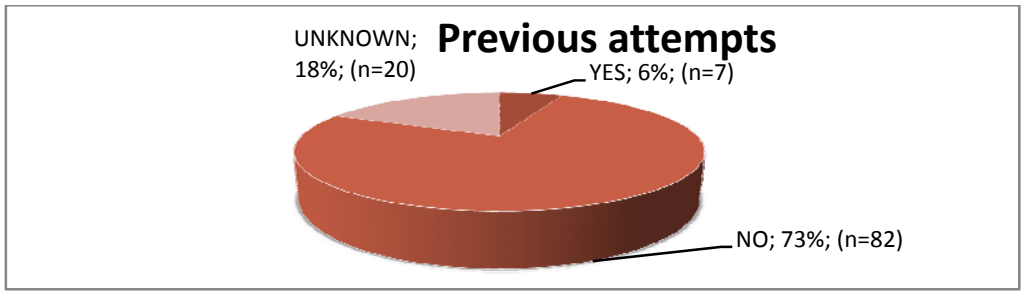

Figure 13: History of previous suicide attempts among suicide victims

In contrast to findings in previous studies, findings from our study show that most of the subjects did not have any history of previous suicidal attempt while only a small percentage (6.2%) revealed a positive history of previous suicide attempt. This could be argued that the

family informants for the suicide were unaware of the victims' past suicidal behaviours and attempts as the subjects may not have revealed the past suicidal behaviours. Moreover, there is high numbers of self-harmers who do not seek medical attention.

4.2 HISTORY OF SUBSTANCE ABUSE

Little is known about the types of substance most strongly related to suicide attempts. Suicide attempts could be associated with a past history of substance disorder or could be associated with having an active disorder. Substance users with suicidal ideations have an elevated risk of first suicide attempts even in the absence of a plan. It is known that the presence of a plan is typically used as a key indicator of suicide risk among ideators but little is known about the predictors of attempted suicide among ideators without a plan. A possible explanation of unplanned attempts among ideators is that the disinhibition is somehow involved in the effects of substance use. Studies have shown that there is an association between the number of substance used and the onset of suicidal ideation, in a dose-related manner.

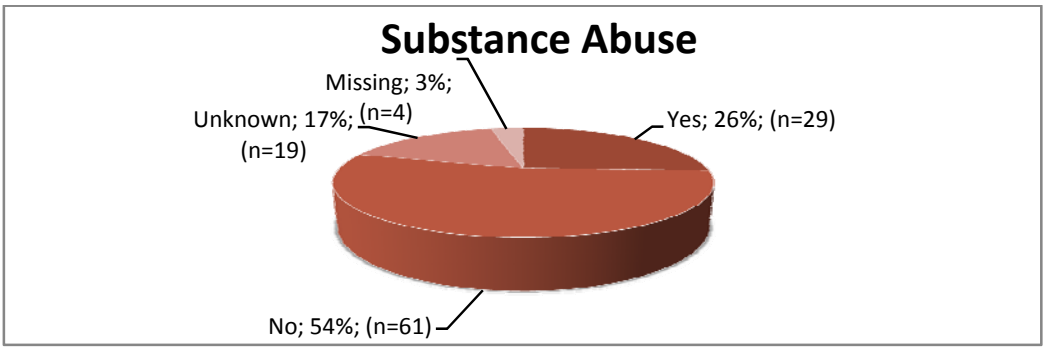

Figure 14: History of substance abuse among suicide victims

Our finding reveal that majority of the suicides did not give a positive history of substance abuse. Here again, family informants may not be informed about such high risk behaviour in the subjects. It could also be possible that family informants could underestimate the magnitude of substance use in the subjects. This also could be explained by the fact that some subjects could have been living away from their families.

4.2.1 Types of Substances Used:

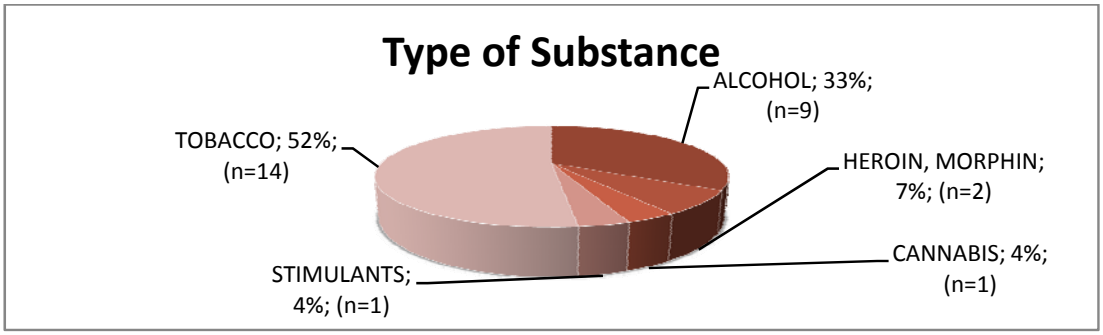

Figure 15: Types of substances used by suicide victims

From the data obtained, it was found that majority of the victims gave a positive history of tobacco use. In contrast to the current findings, previous international studies have found that comorbid alcohol dependence or misuse has been associated with higher incidence of suicide (Fawcett et al, 1990; Duggan et al, 1991; Bronisch & Hecht, 1992).

The possible explanation for our findings is that there is a higher prevalence of tobacco use rather than alcohol use in this country. Moreover, alcohol abuse could be overlooked in women that would result in loss of vital information.

4.3 PHYSICAL ILLNESS – HISTORY AND TYPE OF ILLNESS

Psychological autopsies have found that having a general medical disorder is a strong predictor of completed suicide. Possibilities are that persons with physical illness are more likely to be depressed and depressed individuals are more likely to be suicidal. Therefore, the depression could fully explain the association between physical illness by a general medical condition and suicide. Alternatively, medical illnesses could represent an independent risk factor for suicidality over depressive symptoms. Hence, it is vital to to understand whether such relationship exists after controlling for depressive illness. Having more than one medical illness, conferred a particular high risk (Druss, 2000).

The presence of a physical illness may represent proxies for other intermediate factors such as functional disability, disruption of social support, chronic pain etc which may lead to a lower quality of life. Thus individual may regard their life as no longer worth living.

Seven cases (6.2%) were reported to be having a physical illness. Subjects gave a history of medical illness such as diabetes (n=2) and cerebrovascular accidents (n=2). One subject respectively had history of coronary arterial disease, malarial infection and abdominal discomfort. Previous studies have shown that general medical conditions such as multiple sclerosis, cancer and conditions which have potentially life-threatening exacerbations like asthma and pulmonary disease, have been implicated as risk factors in suicide. Bias could occur in obtaining information where the family informants for the suicides may have over-emphasised possible causal factors in an attempt to explain the death.

4.4 MENTAL ILLNESS

4.4.1 History of Mental Illness

The presence of mental illness has been identified as a strong predictor of suicide completions. Three major mental disorders with high risk for suicide are: Major Depressive Episode; substance dependence; and emotionally unstable personality disorder(Cheng, Chen et al. 2000). People with more than one of these diagnoses are at particularly high risk, and the possibility of suicide is also greater depending on the severity of the disorder. However, interviews with next-of-kin after suicide deaths in NSRM have revealed that 77% (n = 77) of all suicides have no history of mental illness and only 7.1% (n = 8) have history of mental illness.

Among the deceased who had history of mental illness, 2 (1.8%) of them were diagnosed to have Depression, 2 (1.8%) had Schizophrenia and 3 (2.7%) were undiagnosed and untreated.

In terms of previous admission to a psychiatric facility, only two of the deceased were reported to be positive. One case had been admitted to Hospital Bahagia Ulu Kinta and Hospital Ipoh respectively. This reflects the number of patients who were diagnosed to have Schizophrenia.

The majority of the deceased (n = 79, 69.9%) have no family history of mental illness. Only 2 of them (1.8%) have positive family history of mental illness, while 28.3% (n = 32) were reported as unknown.

4.5 LIFE EVENTS PRIOR TO SUICIDE

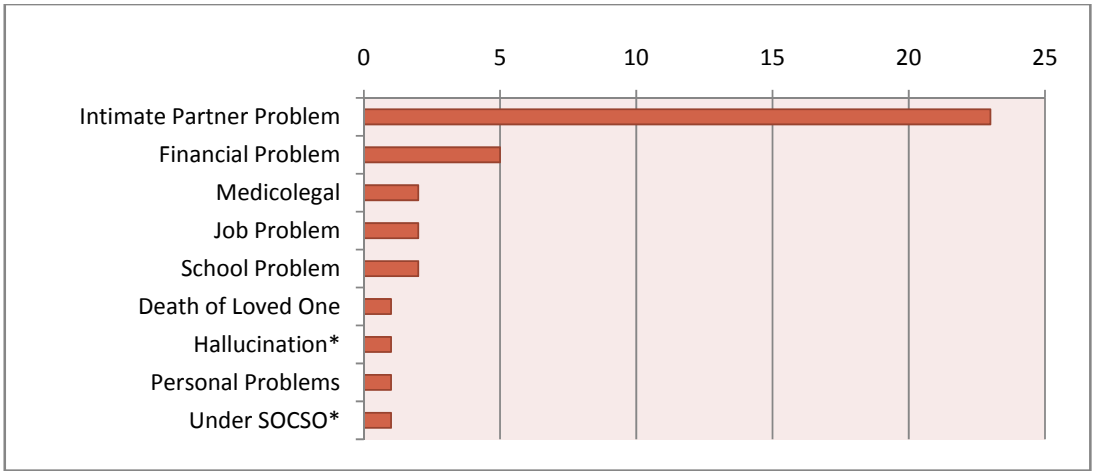

Figure 16: Types of life events experienced by suicide victims (*= as reported by informants)

A high proportion of suicides (n = 38, 33.6%) had experienced life events within three months before suicide. Among this group, 60% (n = 23) of the deceased had intimate partner problem and 13% (n = 5) had financial problem. Two subjects respectively (5%) were found to have job and medicolegal problems prior to suicide. Interestingly, 36% of the deceased had no life event three months prior to suicide and 36% of them were not to have any life events prior to their suicide.

Most of previous studies investigating the relationships between recent life events and suicide have had small sample size and have focused on psychiatric patients (Heikkinen, Aro et al. 1993) (Heikkinen et al, 1994), which makes it difficult to examine the power of an association. A few more representative studies (Bunch 1972; Foster, Gillespie et al. 1999) examined suicides from general populations. These studies have generally found that recent life events play an important role in precipitating suicide. It was found that only loss events have a significant contribution to the risk of suicide.

Common factors that appear to precipitate suicide among youth include a variety of stressful life events such as disciplinary crises, interpersonal loss, interpersonal conflict, humiliation and shame. Suicidal youth are also more likely to be depressed, abuse alcohol and have a history of aggressive and antisocial behaviour.

DISCUSSION AND LIMITATIONS

Several limitations had been identified in this project. In defining suicide, for example, the requirement for 'intention to die' may have restricted the number of cases registered. This may be addressed either by including codes Y10-Y34 (Event of Indeterminate Intent) of ICD-10 into the NSRM or by developing a reporting system for all kinds of non-natural deaths.

Training-wise, although efforts had been made to train all the officers managing the SDP centres, there had been some communication and logistics problems in getting them to come. Generally there is a tendency to associate suicide with psychiatry: resulting in hospital administrators sending staffs from the psychiatric departments to the training session – instead of the forensic units as requested. A lot of following-through needs to be done to enhance the outreach of training sessions.

As mentioned earlier, human resource is a major problem and might not be remediable immediately. The majority of staffs manning the forensics units in district hospitals are also in charge of the Emergency Department, Transport etc. This might distract them from effectively screening for cases and allocate time to interview the next-of-kin. Since the shortage of paramedical staff is ubiquitous nowadays, the forensic fraternity might consider other alternatives like having scientific officers to assist in information gathering.

Process-wise, a major challenge is when patients die due to complications of the suicidal act after being admitted to the ward. At times, the staffs in the forensics unit are not aware of the history and had released the body before the trained officer had a chance to interview the family members. One of the ways to check for this is by working closely with the Royal Malaysia Police and comparing the outcome of their sudden death report investigations with cases captured by the NSRM.

The interview also poses some problems: the informant who came to collect the bodies sometimes has not met the deceased for a long period prior to the latter's death. This may affect the accuracy of data. In the case of foreigners, fellow workers or employers were usually unable to give any valuable information. For Malaysians, efforts should be made to carry out psychological autopsy studies to gather more information from relatives. Although there are differing views, it was generally agreed that the interview should be carried out about 3 months following the death (Pouliot and Leo 2006). Infrastructure wise, some forensic units in district hospitals are very small and hardly has any space for interviewing the grieving family members. Notwithstanding the NSRM, providing better interviewing facilities in forensic units would certainly benefit the clients as well as the staff. It will provide a more conducive setting when staffs have to "break bad news" or carry out any form of information gathering with family members.

There had been some difficulty in capturing the actual time of suicidal act, which was supposed to be recorded in military hours. It had been suggested that in the future, wider time-frames be used e.g. midnight to 6am, 6am to 12 noon, 12noon to 6pm, 6pm to 12midnight.

At the moment, the NSRM does not have sufficient manpower to closely monitor the quality of data collection by SDPs. Most of the supervision is carried out by the forensic physician or

senior medical assistant. However, site visits have been planned so that some form of supervision from SRU and feedback sessions can be carried out more effectively.

Although the online registration system is envisioned to improve data collection, this will be dependent on the availability of internet resources that is available in each hospital. We certainly hope that policy makers would consider developing/ upgrading IT resources in forensic set-ups to ensure better data collection.

CONCLUSION

Suicide rates are a recognized health outcome indicator internationally (World Health Organization 2001). This project will provide information on the natural history and causation of suicide; the contributing factors most amenable to preventive efforts; and the most appropriate target population(s). This information will aid in planning and place preventive efforts on a more solid foundation (World Health Organization 2002). This registry will be able to provide both state- and national-level data.

Suicidal acts will cause medical costs which include emergency transport, medical, hospital, rehabilitation, pharmaceutical, ancillary, and related treatment costs, as well as funeral/ coroner expenses for fatalities and administrative costs (National Center for Injury Prevention and Control 2002). Better and evidence-based efforts at suicide prevention may be able to reduce suicide rates in Malaysia and allow the government/ families to offset these costs. Apart from that, a structured investigation into the process of identification and reporting of non-natural deaths (specifically suicide) will assist in streamlining the management of dead bodies and ascertaining the manner of death. Indirectly it will also provide a training exercise for medical officers in reporting deaths by suicide.

Although this is an early effort, certain interesting trend had emerged, namely: the higher proportion of married persons who committed suicide; male preponderance in those who are married as compared to females; the choice of lethal methods by the female suicides. We certainly hope that with better support, infrastructure and human resource training, these trends can be investigated further.

The uniqueness of NSRM lies in its multidisciplinary platform. Although this may present some communication problems, it also offers advantages in the form of pooling of resources and expertise. After all, suicide is a very complex phenomenon. Being a registry, the NSRM might not be able to provide in-depth details about the causation of suicide. However, it would certainly identify trends and form the baseline for other research in this area.

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Suicide Registry Unit
c/o Department of Psychiatry and Mental Health
Hospital Kuala Lumpur
50586 Kuala Lumpur

Tel: 03 – 26155790
Fax: 03 – 26155791

Email: registry@nsrm.gov.my
Website: www.nsrm.gov.my

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