



PATTERN OF SUBSTANCE AND DRUG MISUSE AMONG YOUTH IN MALAYSIA¹

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ABSTRACT

Substance and drug use, misuse and abuse among adolescents and youth has been observed to be on the increasing trend. In Malaysia, there has not much investigation done to study this trend, therefore one has to rely on other sources to formulate prevention program for the youth population. The objective of this study is to identify patterns related to the use of licit and illicit substances among youth such as demographic (gender, ethnic, age), schooling (form or level, type of school, educational aspiration, prefect status, and disciplinary problems at school), dwellings, (location, type and the presence of recreational facilities) and familial/ factors (parental status, income, living arrangement, presence of relatives who smoke, consume alcohol or/and drugs). A cross-sectional survey was conducted in the northern states of peninsular Malaysia, specifically Kedah, Perlis and Pulau Pinang which sampled respondents from secondary two, four and six students from all types of school going youth (Government schools, Private schools, Sekolah Agama Rakyat (SAR) and Pondok schools) and those not in schools (drop outs). The study also includes the rest of 11 states from all other parts of the country consisting only of government schools youth. A questionnaire comprising the Substance and Drug Misuse Index (SDMI) and demographics is used to collect data from the respondents, and this is complimented with site interviews with headmasters, teachers, student leaders and

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the community surrounding the schools. There were a total of 7,152 respondents in the study, 54.3% females and 45.7% males. The ethnic distribution was 72% Malays, 5.8% Indians, and 17.8% Chinese. The Substance and Drug Misuse Index (SDMI) is the main information that compares the level substance and drug use with a range of scores between zero (i.e. never tried any substances to a maximum of 54, who tried all substances listed on the index and often used these substances all the time). More than three quarters of respondents scored zero (77.3%), reported never use any of the listed substances. The highest score is 29. The mean score for Malaysia is 0.85. The scores are calculated for each state, and the highest score is 1.74 for Sarawak followed by Perlis at 1.14. Other states such as Kedah, Johor and Kelantan have scores higher than the Malaysian average. When comparing with demographic data, male respondents showed a higher tendency for substance and drug misuse compared to female respondents. There is no significant difference in the level of substance and drug misuse between Malay and non Malay respondents. Also, a significant relationship and difference are observed between age of respondent, type of school, disciplinary problems at school type of living arrangements, smoking, alcohol use and substance misuse by relatives and the level of substance and drug misuse. Implications for prevention programs for youth are discussed.

ABSTRAK

Penggunaan dan penyalahgunaan bahan serta dadah di kalangan remaja dan belia kini berada pada tren yang meningkat. Di Malaysia, belum ada banyak kajian yang dilakukan untuk melihat tren ini, dengan yang demikian tidak banyak data tempatan yang dapat digunakan untuk membina program pencegahan yang tepat untuk kumpulan ini. Matlamat kajian ini ialah untuk mengenal pasti penggunaan bahan di kalangan remaja dikhususkan kepada demografi (gender, etnik dan umur) persekolahan (tingkatan, tahap dan jenis sekolah, aspirasi pendidikan, status pengawas, dan masalah disiplin di sekolah), tempat tinggal (lokasi, jenis kemudahan rekreasi) dan faktor keluarga (status ibu bapa, suasana tempat tinggal, pendapatan isi rumah, serta kehadiran saudara-mara yang merokok, minum arak dan menggunakan dadah). Satu tinjauan dilakukan di negeri-negeri di utara semenanjung (Kedah, Perlis & Pulau Pinang) dengan mengambil sampel pelajar tingkatan dua, empat dan enam dari semua jenis sekolah (kerajaan, swasta, Sekolah Agama Rakyat (SAR))



dan Pondok) serta mereka yang tercicir sekolah. Kajian juga melibatkan sekolah kerajaan yang disampel dari 11 negeri lain. Satu soal selidik yang mengandungi Indeks Penyalahgunaan Bahan dan Dadah (SDMI) dan soalan demografi digunakan untuk mengumpul data dari responden, disamping temu duga dengan guru besar atau pengetua, guru, ketua pelajar, murid serta masyarakat disekeliling. Seramai 7,152 responden terlibat dengan kajian ini; 54.3% lelaki dan 45.7% perempuan; 72% Melayu, 5.8% India, dan 17.8% Cina. SDMI membekalkan data utama bagi membandingkan penggunaan bahan dan dadah di kalangan responden yang mempunyai julat dari “kosong” (iaitu tidak pernah menggunakan sebarang bahan walaupun rokok) kepada 54 (yang mencuba semua dadah yang tersenarai). Lebih dari tiga per empat (77.3%) melaporkan tidak pernah menggunakan sebarang bahan. Skor tertinggi ialah 29; purata untuk Malaysia ialah 0.85; skor tertinggi untuk negeri ialah Sarawak (1.74) diikuti dengan Perlis (1.14). Negeri lain yang mempunyai skor melebihi skor purata Malaysia ialah Kedah, Johor dan Kelantan. Apabila dibandingkan dengan data demografi, kajian mendapati bahawa responden lelaki mendapat skor yang tinggi. Tidak ada perbezaan di antara skor responden Melayu dan Bukan Melayu. Juga, terdapat perbezaan nyata bagi tahap umur responden, jenis sekolah mereka, mereka yang mempunyai masalah disiplin di sekolah, lokasi serta tinggal dengan siapa, dan saudara-mara yang merokok, minum arak dan menggunakan dadah dengan tahap skor SDMI yang lebih tinggi. Implikasi kepada program pencegahan dadah dengan kumpulan ini dibincangkan.

INTRODUCTION

The involvement of youth in licit and illicit substances, globally, is on the rise (The World Drug Report, 2007). The advent of recreational drugs, combined with rave lifestyle coupled with purposeful or incidental exposure and the availability of psychoactive substances and drugs has invited young people to be more exposed and involved with substance misuse and abuse.

This trend is also being observed in Malaysia and there is an increasing number of youth experimenting with licit substances and illicit drugs. The National Anti-Drugs Agency (AADK) has recorded youth as young as 13 years old involved with psychoactive drugs. In a span of just 5 years (1998-2002), AADK has identified



a small percentage of this age group involvement with drugs (0.01-0.06%) as compared to the population of drug addict in the country. However, this number increases as the age bracket increases, for example, 0.35% – 0.59% among adolescents between 13-15 years; 1.84% to 2.29% for the 16 to 17 years age group; and 4.35% to 5.63% for the 18 to 19 years age group. This accounts for approximately 6.6% to 8.6% out of the population of drug users and addicts for this recent 5 years period in the country.

These statistics represent youth that was legally mandated to government treatment and rehabilitation, and it can be considered to be only the “tip of the iceberg” of the drug use scenario in the country. This numbers do not include youth that tried licit or illicit substances or those categorized as recreational users. This number of users of licit and illicit substances has not yet been estimated by the authorities and it represent an important number to be identified in order to strategize effective prevention and intervention programs.

In 2002, Mahmood *et al.* calculated the multiplier for drug users in Malaysia at 2.87, which means, taking the recorded number of drug users (DU) for 2002 and multiplying it with the multiplier will signify the estimated number of drug users in the country. Based on these multipliers, it can be estimated that there are 59,243 to 77,196 youth in Malaysia that can be categorized as substances users (Mahmood *et al.*, 2004).

Past studies has also revealed that about 4.4% of youth in the state of Kedah are involved with various social ill activities that include the use and misuse of licit and illicit substances (Mahmood *et al.*, 1997). If this figure as an indication of youth involved with social ills activities in the country, we are facing with a significant number that need effective intervention programs to prevent it from escalating to a more serious situation.

In other investigations (e.g. Mahmood *et al.*, 2003), it was also observed that among youth that are involved with illicit substances and drugs, there are significant number that can be successfully rehabilitated to be drug free with proper individual and community-based programs. This suggests that youth can readily change their behaviors and attitudes if exposed to the proper intervention or



rehabilitation programs (Mahmood & Yahya, 2004; Lloyd, Joyce, Hurry & Ashton, 2000). Similarly, the drug prevention education programs in Malaysia have provided some positive impact on the knowledge and awareness of youth on drug issues (Mahmood, Hassan & Yahya, 2003; Mahmood & Hassan, 2003; Mahmood & Yahya, 2004, 2004a).

However, the limitations of these studies is that all of them identified the possible incidence of youth involvement with licit and illicit drugs, but do not investigate the actual risk factors that our youth are exposed to. Thus, this limitation lends strong justification to investigate the incidence of youth's involvement with substances use, misuse and abuse including its etiological and causal factors, so that the output can provide the relevant policy makers with pertinent information for the formulation of intervention and preventive strategies.

Other equally important investigations suggested the need to establish indicators, understandings and awareness about children's and young people's ideas, abilities, awareness and perceptions towards substance and drug misuse (Mahmood *et al.*, 1997; Wyvill, 1999; Wibberley & Price, 2000; Wyvill & Ives, 2000; Mahmood, 2002). This is to enable policy makers especially the Ministry of Education Department and the National Anti-Drugs Agency to formulate effective prevention education and intervention strategies to reduce if not to eradicate drug problems amongst youth in the country. This is also in line with the aspiration of AADK and the Malaysian government, which is to declare total war against drugs and to have a nation free from drugs by the year 2015.

OBJECTIVE

The objective of this study is to identify patterns related to the use of licit and illicit substances among youth such as demographic (gender, ethnic, age), schooling (form or level, type of school, educational aspiration, prefect status and disciplinary problems at school), dwellings (location, type and the presence of recreational facilities) and familial factors (parental status, income, living arrangement, presence of relatives who smoke, consume alcohol or drugs).



METHODOLOGY

A cross-sectional survey is conducted in two parts: (i) sample from the Northern states of peninsular Malaysia, specifically Kedah, Perlis and Pulau Pinang which sampled from secondary two, four and six students from all types of school going youth (Government schools, Private schools, Sekolah Agama Rakyat (SAR) and Pondok schools) and those not in schools (drop outs); (ii) the rest of 11 states from all other parts of the country consisting only of government schools youth. A questionnaire is used to collect primary data from the respondents and this is complimented with site interviews with headmasters, teachers, student leaders and the community surrounding the schools.

a. Population and sample

The population of students in government secondary schools amounts to 2,108,125 and the number of government secondary schools in 2006 is 1,911 schools. In addition, the number of students in private schools is 74,157 enrolled in 173 private schools. The number of students in SAR is 19,297 enrolled in 81, SAR schools. The total Malaysian students' population that is not registered amounts to 3,784. This figure was obtained by subtracting total unregistered student from total registered students in government schools. No official records for students in the Pondok school system. This information is obtained from several departments in the Ministry of Education.

The population of students from the states of Kedah, Perlis and Pulau Pinang was obtained for four types of school that is from government, private, SAR schools and Pondok school system. The total population consists of 301,947 students. This study looks at different types of schools only at the northern states because of logistic and budget limitations. It is difficult to systematic sample and accesses all types of schools from all over the country. From these three northern states, Kedah and Perlis represents the rural schools while Pulau Pinang represents the urban milieu. The statistics for the type, number of students and schools for this area is as in Figure 1.



Students which are excluded from the study are aged out of the 12-18 years category and those studying outside the country for more than a year.

Proportionate systematic sampling was used to select the samples from the first three northern states in Malaysia. The sampling frame was the name of schools from 3 (Kedah, Perlis and Pulau Pinang) states. Due to uneven distribution of the number of schools between government, private, SAR and Pondok schools, the type of school were used as a separate sampling frame. Since each school strata has more than 100 students, hence 10% of the total schools population from each stratum (school type) was chosen to be the sample of this study. A total of 30 schools from the government school, 3 from the private school and 5 from the SAR school were chosen randomly from the sampling frame as respondents in this study, totaling to 38 schools as the sample of this study. As for the Pondok schools it will be dictated by the number obtained through snowball sampling technique.

Figure 1: Population of All Schools from Three Northern Malaysian States

Sample of Youth

| State | SAR | | Private | | Government Schools | | Pondok Schools | Not Schooling (No. of students) |
|--------------|----------------|-----------------|---------------|-----------------|--------------------|-----------------|----------------|------------------------------------|
| | No. of schools | No. of students | No. of school | No. of students | No. of school | No. of students | | |
| Kedah | 25 | 8,367 | 8 | 1,985 | 158 | 167,556 | N/A | 2,223 |
| Perlis | 3 | 862 | 4 | 1,281 | 24 | 23,364 | N/A | 197 |
| Penang | 17 | 2,260 | 9 | 3,161 | 109 | 111,027 | N/A | 1,364 |
| Total | 45 | 11,489 | 21 | 6,427 | 291 | 301,947 | | 3,784 |



| Type of Schools | Student Number | No. of Schools |
|-----------------|----------------|----------------|
| Government | 2,108,125 | 1,911 |
| Private | 74,157 | 173 |
| SAR | 19,297 | 81 |
| Pondok School | N/A | N/A |

Figure 2 show the number of students according to type of schools and the state and the number sample chosen for this study. The total population consists of 301,947 students. To obtain 95% confident within 5% of the percentage in the population, a minimum of 384 students have to be chosen randomly. As for the sample of non-schooling students⁶ two methods were used. To reach the sample for non-schooling students, enumerators among the drop-outs were used. This was done based on the experience obtained during pilot study whereby the non-schooling students were more easily approached by individuals of their own group. The second method is through chain referral technique obtained through the National Anti-Drug Agency, community and village leaders, headmasters, teachers and student counselor from their previous schools.

Sampling for the students from the government, private and SAR schools were obtained by going to the individual schools that were chosen systematically from each of the sampling frame according to the school type. Every student from the chosen school was taken as respondent of this study.

The general guideline is that for government schools, the total number of students should not be less than 100 subjects. For other schools, the number of respondents will be guided by the number of classes and student in the schools. In the case of Pondok school students sampling, their locations were be obtained with the help of the community or village leaders and snowball sampling from parents who sent their children to these schools. For each Pondok school identified, all students were considered as respondents.

⁶ The students that are under this category is defined as those who dropped out, changed school (from school A to school B due to disciplinary problems) and continuously not attending school and the students who have not completed their form five level education.



A purposive snowball sampling technique was used to sample student that are not registered, as there are no available sampling frame for these categories. The choice of the drop-out students is based on area or location as obtained from the key-informants from phase two of the research.

Students that are under the category of “non-registered” for this study are those who dropped out, changed school (from school A to school B due to disciplinary problems) and continuously not attending school and the students who have not completed their secondary five level of education. The number of sample for Kedah, Pulau Pinang and Perlis are 10% of its total population. Thus the sample number of students for Kedah is 22, of which 10 is from Perlis and 14 from Pulau Pinang. For this particular group of students, their names and house addresses will be obtained from their previous schools. Apart from that, information gathered from community or village heads, factories and Parents Teachers Association (PTA) from their previous school will be used to locate them.

Similarly for the private schools, specifically for Pulau Pinang the list of names for the sample is obtained through purposive sampling. It is because they are registered as tuition schools and not as government school.

Figure 2: Sampling from the Three Northern States

Government School

| States | Schools | Total Student Population |
|--|------------------|--------------------------|
| Kedah | 291 (3 States) | 301,947 (3 states) |
| Perlis | 1,911 (Malaysia) | 2,108,125 (Malaysia) |
| Penang | | |
| To increase return rate the sampling size of 3 is increased to 6 number of schools | | |

Total no. of school samples = 3

↓

To increase return rate the sampling size of 3 is increased to 6 number of schools

Private School

| States | Schools | Total Private School Students |
|----------------------------|----------------|-------------------------------|
| Kedah | 21 (3 States) | 6,427 (3 states) |
| Perlis | 173 (Malaysia) | 74,157 (Malaysia) |
| Penang ⁷ | | |

Total no. of school samples = 3

↓
To increase the return rate of schools, the sample size is increased from 5 to 10 schools.

SAR School

| States | Schools | Total SAR School Students |
|---------------|---------------|---------------------------|
| Kedah | 45 (3 States) | 11,489 (3 states) |
| Perlis | 81 (Malaysia) | 19,297 (Malaysia) |
| Penang | | |

Total no. of school samples = 5

Sampling from other 11 states in Malaysia was done with the assistance of the State Education Department and Ministry of Education. Each state purposely chose three schools; one which is termed as high risk school⁸ and two schools which are the normal schools. A sample of 100 students was randomly drawn from the secondary 2, 4 and 5⁹ plus 6 group to make up the sample for the state.

b. Measurements

A battery of questionnaire is used to collect primary data for this study. It consists of demographic, background data about school, housing and family environment.

⁷ There is no sampling frame from Penang private schools, because they are registered as tuition schools and not under government registered school. Hence sampling for the private school was done through purposive sampling.

⁸ A high risk school is a term used by the State Education Department when the school is in a drug high-risk area and that they have identified many students experimenting with drug use.

⁹ Some schools also include Form 5 students because they have very small number of Form Six students.



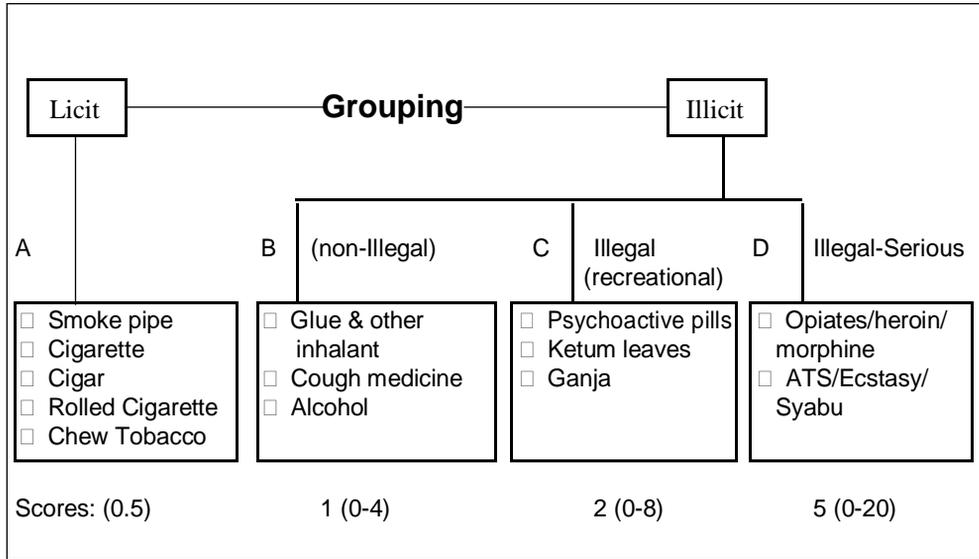
For drug use variable, the Monitoring the Future (MTF) study (Lloyd *et al.* 2001) stated that over the years, it has investigated the use of licit and illicit drugs, including disapproval of people doing drugs, perceived availability and perceived risks. In this study, drug use is divided into two main categories (licit and illicit) and for illicit drugs it will be further divided into three sub-categories (Figure 3).

Different values are assigned to indicate the severity of drug use. For those using licit substances such as cigarette, pipe, cigar and as such, a score of 0.5 is assigned. If they never tried these substance the score is "0", if they "tried once" a score of "1" is assigned; if "need sometimes" a score of "2" is assigned; and if "often use" a score of "4" is assigned. Thus, for illicit substances, a possible range of score is 0-2; for non-illegal substance, a range of score 0-4; for illegal (recreational), a range of score of 0-8; and for illegal (serious), a range of score of 0-20 is assigned. Thus, a composite range of 0-34 is possible.

RESULTS

There were a total of 7,152 respondents in the study, 54.3% females and 45.7% males. The ethnic distribution was 72% Malays, 5.8% Indians and 17.8% Chinese. The rest of the group, which made up 4.1%, were other ethnic groups such as Siamese (23 students), Indigenous Sabahans/Sarawakians (203 students), Indigenous West Malaysian or Orang Asli (4 students) and 13 Sikhs. A total of 5,393 (75.4%) out of 7,152 answered the Islamic religiosity section, thus at least 75.4% of the respondents are Muslims.

Figure 3: Categorization of Licit and Illicit Substance Use



The age of the respondents range from 12 to 23 years old, with the modes of 14 years old (36.2%), 16 years old (34.4%) and 18 and 19 year olds (17.7%). This is because the respondents were specifically selected from students who were in form two, form four and the lower six forms as these forms were not in the examination year. The rest of the respondents who reported being 13, 15 and 17 year were probably those who calculated their age by their birthday and not by the year of schooling. Only 46 respondents were taken from out-of-the-school population. These respondents were categorized under 'tercicir' or 'dropped out' in the schooling type section. The rest of the respondents were from form two, form four and form six.

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Respondents were asked to indicate whether they have tried using the substances listed in the questionnaire. The available responses were 'never used', 'used once', 'used a few times' and 'used often'. The frequencies of answers are as shown in Table 1.



Responses are grouped into the high risk category (tried once), substance use/misuse (used sometimes) and substance abuse/dependents (often used). Among the substance abuse category, it was observed that 0.5% abused ketum, 0.4% abused psychoactive pills and cigarettes; and 0.3% abused marijuana and ATS. While the substance use/misuse category observed 5.7% for cigarettes; 2.8% for rolled cigarettes; 1.0% for ATS; 0.9% ketum leaves; 0.8% for non-prescribed cough medication, alcoholic drinks and psychoactive pills; 0.6% marijuana and 0.5% cigar and pipe/tobacco products. Those who fall into the high risk group for substance use can be seen with youth using rolled cigarettes (7.9%); cigarettes (7.8%); 4.2% alcoholic drinks and cough medication (3.3%). Could the use of these substances at an early age leads to future drug use?

Table 1: Substance and Drug Misuse among Youth

| Weightage of use or Misuse | Substance | Never used 0 % | Tried once 1 % | Used Sometimes 2 % | Often used 4 % |
|----------------------------|---|----------------------|----------------------|--------------------------|----------------------|
| 0.5 | Cigarette (<i>Rokok biasa</i>) | 86.1 | 7.8 | 5.7 | 0.4 |
| | Rolled cigarette, Bidis (<i>Rokok daun</i>) | 89.1 | 7.9 | 2.8 | 0.1 |
| | Cigar (<i>Curut</i>) | 97.5 | 1.7 | 0.5 | 0.0 |
| | Pipe and tobacco (<i>Paip dan tembakau</i>) | 98.8 | 0.8 | 0.5 | 0.0 |
| | Tobacco chew (<i>Menggunyah tembakau, songel</i>) | 99.6 | 0.2 | 0.2 | 0.0 |
| 1 | Inhalants (<i>Menghidu gam atau inhalan</i>) | 99.2 | 0.5 | 0.3 | 0.0 |
| | Non-prescribed cough mixture (<i>Ubat batuk tanpa preskripsi</i>) | 95.9 | 3.3 | 0.8 | 0.0 |
| 2 | Alcoholic drinks (<i>Beer, wine, liquor, etc</i>) | 95.1 | 4.2 | 0.8 | 0.0 |
| | Ketum leaves (<i>Daun ketum/ biak</i>) | 97.1 | 1.5 | 0.9 | 0.5 |
| | Psychoactive pills (<i>Pil khayal</i>) | 97.7 | 1.1 | 0.8 | 0.4 |
| | Marijuana (<i>Ganja</i>) | 98.3 | 0.9 | 0.6 | 0.3 |
| 5 | Heroin (<i>Heroin</i>) | 99.4 | 0.4 | 0.2 | 0.0 |
| | Morphine (<i>Morfin</i>) | 99.5 | 0.3 | 0.2 | 0.0 |
| | Opium (<i>Candu</i>) | 99.4 | 0.4 | 0.2 | 0.0 |
| | ATS (<i>Pil kuda, Syabu, Ecstasy</i>) | 98.7 | 0.0 | 1.0 | 0.3 |

4.4 SUBSTANCE AND DRUG MISUSE INDEX (SDMI)

The substance and drug misuse index (SDMI) is a single score consisting of the total of the scores for the weightage and the frequency of substance and drug misuse for all the licit and

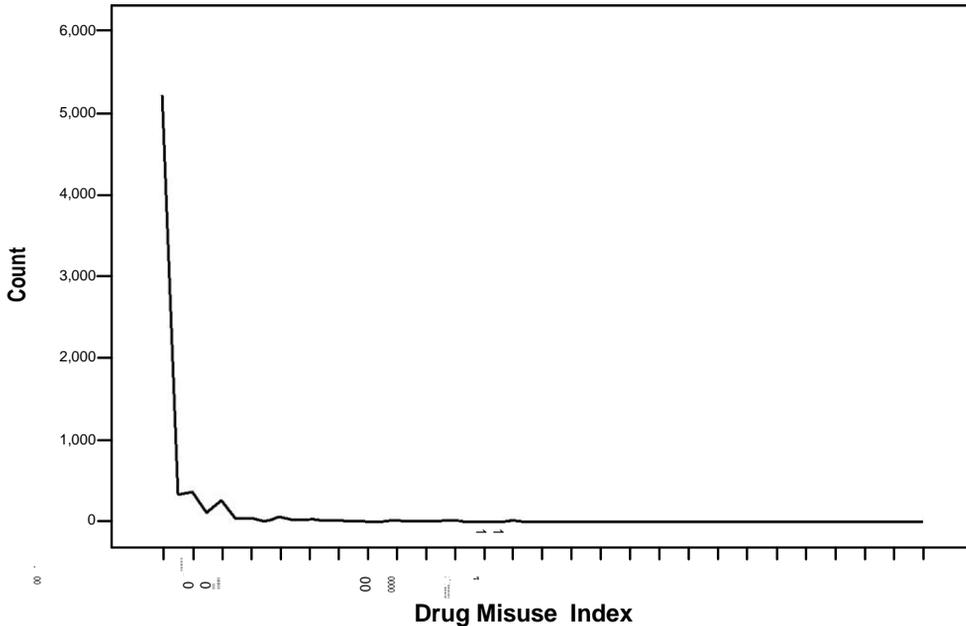


Figure 4: Substance and Drug Misuse Index

illicit substances (Figure 4). The weightage of the misuse of these substances and drugs were assigned according to the level of its seriousness, an indicator of scores that was concluded through discussions between the researchers and officers of NADA and Ministry of Education. Four categories of seriousness were identified and given a score of a '0.5', '1', '2' and a '5' respectively. The degrees of usage were given the weightage of a '0' (never use), '1' (tried once – indicating high risk group), '2' (use sometimes – indicating substance use/misuse group) and '4' (used always – indication substance abuse/dependency). This is as shown in the Table 2.

The range of scores possible for the substance misuse index is between zero (i.e. never tried any substances to a maximum of 54, who tried all substances listed on the index and often used these substances all the time). The distribution of scores of the



misuse index is shown in Figure 4. More than three quarters of respondents scored zero (77.3%), meaning that they reported never use any of the listed substances, not even cigarettes. The highest score is 29 and the graph shows the distribution of the misuse index. This index will be used in comparing the profiles of those using or misusing and not using or misusing substances and drugs.

The mean score for Malaysia is 0.85. The scores are calculated for each state and the highest score is 1.74 for Sarawak followed by Perlis at 1.14. Other states such as Kedah, Johor and Kelantan have scores higher then the Malaysian score (Figure 5).

Table 2: SDMI Scores by State

| State | Mean | N | Std. Deviation |
|------------------|------|------|----------------|
| Perlis | 1.14 | 1203 | 5.97 |
| Kedah | 0.94 | 1405 | 3.14 |
| Penang | 0.65 | 1343 | 2.13 |
| Perak | 0.43 | 247 | 1.74 |
| Selangor | 0.78 | 214 | 3.56 |
| Kuala Lumpur | 0.67 | 291 | 4.22 |
| Negeri Sembilan | 0.57 | 254 | 2.34 |
| Melaka | 0.48 | 265 | 1.25 |
| Johor | 1.13 | 256 | 2.37 |
| Kelantan | 1.02 | 282 | 2.07 |
| Pahang | 0.49 | 245 | 1.77 |
| Terengganu | 0.71 | 257 | 3.39 |
| Sabah | 0.49 | 261 | 1.34 |
| Sarawak | 1.74 | 258 | 6.82 |
| Total (Malaysia) | 0.85 | 6781 | 3.69 |

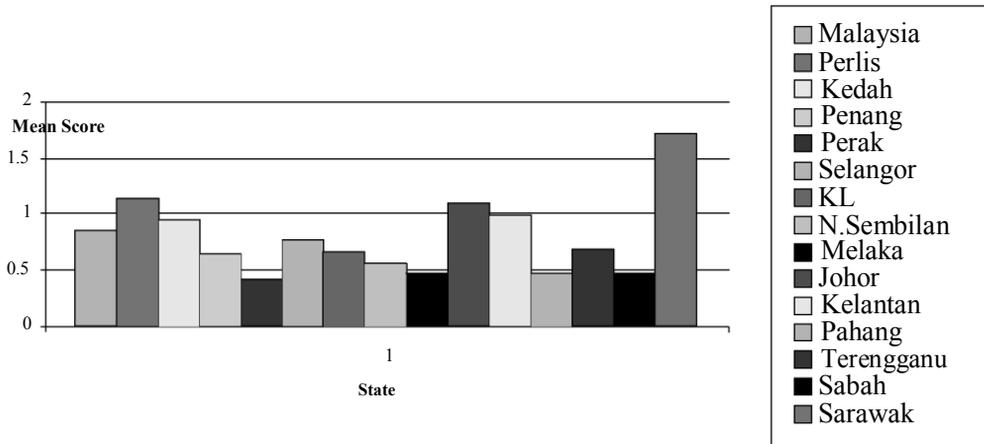


Figure 5: SDMI according to States

Table 3 show the substance use and misuse among youth for Malaysia. In general, it was observed that for licit and some illicit substances, there are more ‘one time users’ than ‘occasional users’ as compared to regular users or abusers. However, for hard drugs (heroin, morphine, ATS), there are more ‘occasional users’ as compared to ‘one time users’ (Figure 6). This show that there are less number of youth intending to try drugs, however for those who started to use these drugs, they have probably show some early signs of physical dependency.



Table 3: Substance Use Patterns among Youth for Malaysia

| MALAYSIA | Used only once | Use once a while | Always use |
|--|-----------------------|-------------------------|-------------------|
| Cigarette (<i>Rokok biasa</i>) | 524 | 382 | 24 |
| Rolled cigarette, Bidis (<i>Rokok daun</i>) | 523 | 188 | 7 |
| Cigar (<i>Curut</i>) | 106 | 29 | 0 |
| Pipe and tobacco (<i>Paip dan tembakau</i>) | 50 | 29 | 0 |
| Tobacco chew (<i>Mengunyah tembakau, songel</i>) | 11 | 12 | 0 |
| Inhalants (<i>Menghidu gam atau inhan</i>) | 34 | 18 | 0 |
| Non-prescribed cough mixture (<i>Ubat batuk tanpa preskripsi</i>) | 214 | 50 | 0 |
| Alcoholic drinks (<i>Beer, wine, liquor, etc</i>) | 266 | 50 | 0 |
| Ketum leaves (<i>Daun ketum/ biak</i>) | 95 | 57 | 30 |
| Psychoactive pills (<i>Pil khaya</i>) | 69 | 52 | 25 |
| Marijuana (<i>Ganja</i>) | 55 | 38 | 17 |
| Heroin (<i>Heroin</i>) | 0 | 23 | 14 |
| Morphine (<i>Morfin</i>) | 0 | 19 | 13 |
| Opium (<i>Candu</i>) | 0 | 24 | 14 |
| ATS (<i>Pil kuda, Syabu, Ecstasy</i>) | 1 | 63 | 20 |

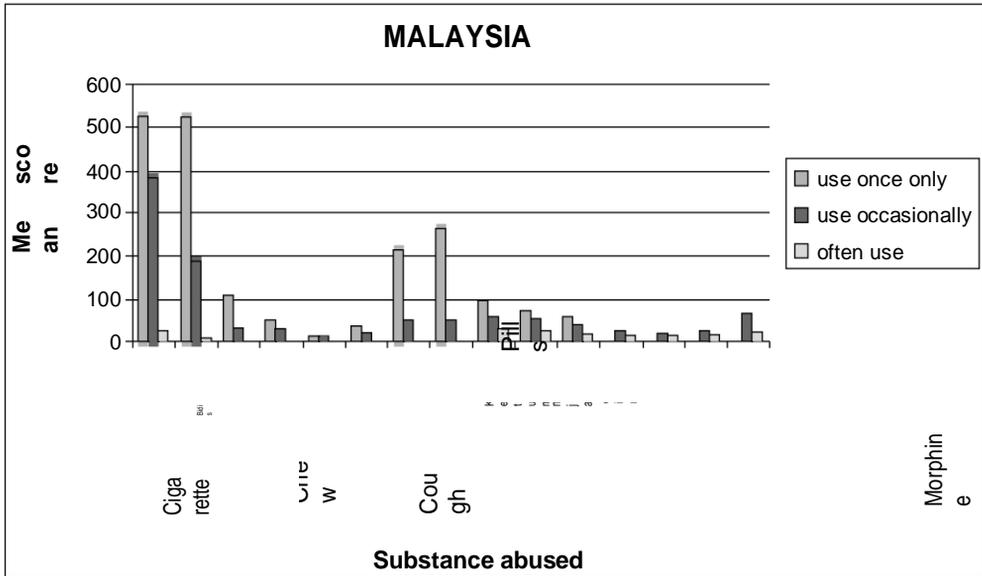


Figure 6: Substance misuse and abuse by type of substance

Gender

A t-test was conducted to ascertain the differences in the level of substance and drug misuse between male and female respondents. The result is shown in Table 4 below.

Table 4: t-test of Drug Misuse Index for Males and Females

| Gender | n | Mean | SD | t | p |
|--------|---|------|------|--------|-----|
| Male | | 1.14 | 2.96 | 16.618 | .00 |
| Female | | 0.25 | 1.21 | | |

The result shows that there is a significant difference in the level of substance and drug misuse between male and female respondents ($t_{(6768)} = 16.618, p < .05$). Male respondents showed a higher tendency for substance and drug misuse ($M = 1.14, SD = 2.96$) compared to female respondents ($M = 0.25, SD = 1.21$).

Ethnic Group

A t-test was conducted to ascertain the differences in the level of substance and drug misuse between Malay and non-Malay respondents. The result is shown in Table 5 below.



Table 5: t-test of Drug Misuse Index for Malay and non Malay Respondents

| Ethnic | n | Mean | SD | t | p |
|-----------|------|-------|------|-------|-----|
| Malay | 4904 | 0.642 | 2.35 | -1.08 | .06 |
| Non-Malay | 1876 | 0.707 | 1.92 | | |

The result shows that there is no significant difference in the level of substance and drug misuse between Malay and non Malay respondents ($t_{(6768)} = -1.08, p > .05$).

Age

The age of students were correlated to the substance and drug use index to see whether there is a significant relationship of age to substance and drug misuse. The result is shown in Table 6 below. The result shows that there is a significant relationship between age and the level of substance and drug misuse ($r(7152) = .071, p = .00$). The higher the age of the respondents, the higher the score of the substance and drug misuse index. However, the strength of the relationship is very small.

Table 6: Relationship between Age and Substance and Drug Misuse

| Variables | Mean | Std. Deviation |
|------------|-------|----------------|
| Age | 15.74 | 1.70 |
| Drug Index | .66 | 2.25 |

| | r | Sig. (2-tailed) |
|-----|---------|-----------------|
| Age | 0.071** | .00 |

** Correlation is significant at the 0.01 level (2-tailed).

School Form/Grade

A statistical test of ANOVA was run to test the differences in the level of drug misuse among the different forms (2, 4 and 6). The results of the ANOVA are shown in Table 7.

Table 7: Differences between Level of Forms and Substance and Drug Misuse

| Form | n | Mean | SD |
|--------|------|------|------|
| Form 2 | 2887 | 0.45 | 1.70 |
| Form 4 | 2891 | 0.79 | 2.46 |
| Form 6 | 1374 | 0.74 | 2.45 |

$$(F_{(2, 6735)} = 19.104, p = .00)$$

The results shows that there were significant differences among the three groups of students according to the different forms ($F_{(2, 6735)} = 19.104, p = .00$). The form four students showed the highest level of substance and drug misuse index ($M = 0.79, SD = 2.46$) compared to the form six students ($M = 0.74, SD = 2.45$) and the form two students ($M = 0.45, SD = 1.70$).

Sheffe post-hoc tests showed that the form four students did not show significantly higher scores than the form six group ($p = .787$), but both form four and six were significantly higher than the form two students ($p = .00$). This is also in line with positive correlation of the index with age.

School Type

A statistical test of ANOVA was run to test the differences in the level of drug misuse among the different school types. The results of the ANOVA are shown in Table 8 below.

Table 8: Differences in the Level of Drug Misuse among the Different School Types

| Type of school | n | Mean | SD |
|-----------------------------------|------|------|------|
| Non-schooling (drop-out) | 46 | 3.28 | 6.50 |
| Private secondary school | 441 | 0.93 | 2.33 |
| Regular Secondary school | 5761 | 0.63 | 2.18 |
| Government/state religious school | 90 | 0.58 | 2.13 |
| Religious (Pondok school) | 94 | 0.55 | 2.11 |

$$(F_{(3, 6776)} = 21.707, p = .05).$$



The results shows that there were significant differences among the group of students in the level of substance and drug misuse when compared by school type ($F_{(3,6776)} = 21.707, p = .05$). A post hoc of Dunnett C test showed that the group of non schooling respondents had significantly higher index ($M = 3.28, SD = 6.50$), compared to those in regular secondary school ($M = 0.6315, SD = 2.18$), national religious school ($M = 0.58, SD = 2.13$) and the private national type school ($M = 0.93, SD = 2.33$). Although the private national type school had the second highest substance and drug misuse index, it was not significantly higher than the other school groups. The religious school had the lowest substance and drug misuse index ($M=0.55, SD=2.11$). However, it was not significantly lower than the national type school.

Educational Aspirations

A statistical test of ANOVA was run to test the differences in the level of substance and drug misuse among the groups categorized by their level of educational aspirations. The results of the ANOVA are shown in Table 9.

Table 9: Level of Substance and Drug Misuse with Educational Aspirations

| Educational aspiration | n | Mean | SD |
|------------------------|------|------|------|
| Diploma | 1024 | 1.63 | 4.04 |
| First degree | 939 | 0.76 | 2.09 |
| Post Graduate | 4483 | 0.59 | 2.11 |

$$(F_{(2, 6128)} = 21.59, p = .00)$$

The results showed that there were significant differences among the group of students when compared for educational aspirations ($F_{(2, 6128)} = 21.59, p = .00$). Dunnett C post hoc tests showed that those who reported wanting to continue education up to the post graduate level had significantly lower substance and misuse index ($M = 0.59, SD = 2.11$) as compared to the group who reported only aspirations for a diploma ($M = 1.63, SD = 4.04$). Those who reported aspirations for a first degree ($M = 0.76, SD = 2.09$) also showed a significantly lower substance and drug misuse index

than those who reported only aspirations for a diploma. However, there was no significant difference in the level of substance and drug misuse between those who aspired for a post graduate degree and those who aspired for a first degree.

Prefect Status in School

A t-test was run to see the differences in the level of substance and drug misuse between respondents who have held post as school, library or hostel prefects and those who have never held a post. The result is shown in Table 10.

Table 10: t-test of Drug Misuse Index for Prefect Status

| Prefect | n | Mean | SD | t | p |
|----------------|----------|-------------|-----------|----------|----------|
| Yes | 2677 | 0.62 | 2.17 | -1.241 | .164 |
| No | 4103 | 0.83 | 2.29 | | |

The result shows that there are no significant differences in the level of substance and drug misuse between respondents who have held prefect post in school, library or hostels and those who have not held any post as a prefect. ($t_{[6768]} = -1.241, p > .05$).

Disciplinary and School Related Offences

A t-test was run to see the differences in the level of drug misuse between respondents who have a record of disciplinary offences and those who did not have any disciplinary record. The result is shown in Table 11.

Table 11: t-test of Drug Misuse Index for Disciplinary Record

| Disciplinary case/record | n | Mean | SD | t | p |
|---------------------------------|----------|-------------|-----------|----------|----------|
| Yes | 1462 | 1.54 | 3.49 | 17.29 | .00 |
| No | 5238 | 0.42 | 1.66 | | |



The result shows that there is a significant difference in the level of substance and drug misuse between respondents who have a record of disciplinary offence and those without any record. ($t_{(698)} = 17.29, p < .05$). Respondents with a disciplinary record showed a higher tendency for substance and drug misuse ($M = 1.54, SD = 3.49$) compared to respondents without any record of disciplinary offence ($M = 0.42, SD = 1.66$).

Housing/Dwelling

Fifty one percent of the respondents stated that they live in the villages and rural area (*kampung*); while 35% stated that they live in residential housing areas (*taman perumahan*). A few respondents (4.7%) stated that they live in small town (*pekan*) while 8.1% stated that they lived in the cities (*bandar*). Forty eight percent (48.1%) of the respondents stated that they live in the traditional village house (*rumah kampung*), while 31.7% stated that they live in a terrace house. A total of 7.3% stated that they live in flats (apartments). Only a small percentage of the respondents reported houses reflecting higher income level, where 7.3% reported living in semi-detached houses, a small number (0.7%) reported living in condominiums, while only 5.9% reported living in bungalow or detached houses.

A. Location

A statistical test of ANOVA was run to test the differences in the level of substance and drug misuse among the respondents categorized according to the different housing locations. The results of the ANOVA are shown in Table 12. The results showed that there were significant differences in the level of substance and drug misuse index among the group of students when compared

according to housing location ($F_{(3, 6744)} = 6.339; p = .00$). Those living in the cities scored the highest ($M = 0.9433, SD = 2.96$), followed by those living in the rural areas ($M = 0.7026, SD = 2.41$), those living in the residential housing areas ($M = 0.5388, SD = 1.79$). Those who lived in small towns had the lowest score ($M = 0.4969, SD = 1.48$). Post hoc tests of Dunnett C showed that those living in the cities showed significantly higher scores than those living in small towns ($p < .05$) and the residential area ($p < .05$), while

those living in the rural areas showed significantly higher scores only to those living in residential areas ($p < .05$).

Table 12: Level of Substance and Drug Misuse with Different Housing Locations

| Housing location | n | Mean | SD |
|--------------------------|------|-------|------|
| City | 582 | 0.943 | 2.96 |
| Town | 332 | 0.496 | 1.48 |
| Rural (Kampung) | 3677 | 0.703 | 2.41 |
| Residential park (Taman) | 2522 | 0.538 | 1.79 |

$$(F_{(3,6744)} = 6.339; p = .00)$$

b. Housing Type

A statistical test of ANOVA was run to test the differences in the level of substance and drug misuse among the respondents categorized according to the different housing types. The results of the ANOVA are shown in Table 13.

Table 13: Level of Substance and Drug Misuse with Different Housing Types

| Types of House | n | Mean | SD |
|-----------------|------|------|------|
| Kampung House | 3253 | .68 | 2.39 |
| Terrace House | 2128 | .56 | 1.87 |
| Semi – Detached | 387 | .62 | 1.85 |
| Bungalow | 406 | .73 | 2.18 |
| Flat/apartment | 485 | .63 | 2.33 |
| Condominium | 46 | 2.81 | 5.68 |

$$F_{(5, 6705)} = 9.542; p = .00)$$



There were significant differences in the level of substance and drug misuse index among the group of students when compared according to housing type ($F_{(5, 6705)} = 9.542$; $p = .00$). Those living in a condominium scored the highest ($M = 2.81$, $SD = 5.67$), followed by those living in a bungalow house ($M = 0.73$, $SD = 2.19$), those living in the traditional village house ($M = 0.689$, $SD = 2.39$), those living in a flat ($M = 0.630$, $SD = 2.34$), semi detached house ($M = 0.62$, $SD = 1.86$) and terrace house. Those who lived in a terrace house had the lowest score ($M = 0.56$, $SD = 1.88$). However, post hoc tests of Dunnett C indicated that individual differences between the different housing types were not statistically significant.

c. Recreational Facilities near Residence

A statistical test of ANOVA was run to test the differences in the level of substance and drug misuse among the respondents categorized according to the availability of recreational facilities around the neighborhood. The results shows that there were no differences among the respondents in the level of substance and drug misuse index when compared according to the availability of recreational facilities around the neighborhood ($F_{(2, 6726)} = 0.02$, $p = 0.980$).

Family

Most of the respondents reported their parents as being married (90.7%). Only a slight number reported their parents as divorced (3.9%). Surprisingly, quite a substantial number reported one of their parents as deceased (5%). A smaller percentage on top of the previous 5%, reported both parents as deceased (0.4%).

It appeared that not all respondents from intact families were living with their parents as only 85% reported living with both their parents. This could point to under reporting of parental divorces, but it could also mean that some of the respondents from intact families were living with their relatives. Apart from the 85% who reported living with both parents, another 7.9% reported living with at least one of their parents. Sixteen percent of the respondents (16.4%) stated other living arrangement that



was not with at least one of their parents. Among other living arrangements stated was staying with their grandparents (2.2%) and siblings or relatives (2.5%). Eight students reported living with their adopted family (0.1%). Another 30 students reported living with friends (0.4%) and 55 students reported living in the dormitories (0.7%).

The most common occupation listed for fathers were civil servants in the government sector. Approximately a quarter of the respondents reported their father to be working in the government sector (26.6%). The next sector is the private (20.4%) followed by business (15.7%) and farming and fisheries. For mother's occupation, more than three quarters of the respondents listed their mother as a housewife. Apart from the 'housewife' section, the distribution pattern for mother's occupation is the same as father's occupation.

a. Family Income

Many students might not know the approximate income for their family. As indicated in this study, 9.8% did not report their family income. However, the median is reported at RM800.00.

A Pearson correlation test was conducted to test the relationship of the level of substance and drug misuse and family income. There was no significant relationship between the family's level of income and the level of substance and drug misuse. ($r_{(7152)} = 0.007, p = .571$).

b. Marital Status of Parents and Respondents' Living Arrangements

A statistical test of ANOVA was run to test the differences in the level of substance and drug misuse among the respondents categorized according to marital status of parents. The results of the ANOVA are shown in Table 14. There were significant differences between groups of respondents in the level of substance and drug misuse when compared according to the marital status of respondents parents ($F_{(3, 6727)} = 5.651, p = .00$). The group with the highest score was those who reported both parents as deceased ($M = 2.25, SD = 5.88$) followed by those who reported one of their parents as



deceased ($M = .81, SD = 2.64$) and those with parents who are still married and living together ($M = .64, SD = 2.19$). Surprisingly, the group with the lowest score was those who reported parents as separated or divorced ($M = .63, SD = 2.13$).

Table 14: Level of Drug Misuse according to Marital Status of Parents

| Marital status of parents | n | Mean | SD |
|---------------------------|------|------|------|
| Both deceased | 31 | 2.25 | 5.84 |
| Either one deceased | 356 | 0.81 | 2.64 |
| Married and together | 6438 | 0.64 | 2.19 |
| Separated or divorced | 274 | 0.63 | 2.13 |

$$(F_{(3, 6727)} = 5.651, p = .00)$$

A statistical test of ANOVA was run to test the differences in the level of substance and drug misuse among the respondents categorized according to respondents' living arrangements. The results of the ANOVA are shown in Table 15. There were significant differences between groups of respondents in the level of substance and drug misuse when compared according to the daily living arrangements of the respondents ($F_{(2, 6777)} = 7.903, p = .00$). The group with the highest score was those who reported living with other people ($M = 1.06, SD = 3.20$) followed by those who reported living with at least one of their parents ($M = .69, SD = 2.40$). The group with the lowest score was those who reported living with both parents ($M = .63, SD = 2.14$).

Table 15: Level of Drug Misuse According to Living Arrangements of Parents

| Living arrangement | n | Mean | SD |
|--------------------------|------|------|------|
| With other people | 453 | 1.06 | 3.20 |
| With at least one parent | 563 | 0.69 | 2.40 |
| With both parents | 6103 | 0.63 | 2.14 |

$$(F_{(2, 6777)} = 7.903, p = .00)$$

c. Relatives Smoking Cigarettes or Cigars

A t-test was conducted to test the differences in the level of substance and drug misuse between respondents with relatives who smoke cigarettes and those who do not have any relatives smoking cigarettes. The result of the t-test is shown in Table 16.

Table 16: Level of Substance and Drug Misuse with Relatives Who Smoke

| Relatives smoke | n | Mean | SD | t | p |
|-----------------|------|------|------|-------|-----|
| Yes | 1624 | 0.71 | 2.33 | 3.079 | .00 |
| No | 5526 | 0.53 | 1.96 | | |

The result shows that there is a significant difference in the level of substance and drug misuse between respondents with relatives who smoke and those who do not have any relatives smoking ($t_{(6778)} = 3.079, p = .05$). Respondents who have relatives who smoke have a higher tendency for substance and drug misuse ($M = 0.71, SD = 2.33$) compared to those who do not have any relatives involved in substance and drugs ($M = .53, SD = 1.96$).

d. Relatives involved in Alcohol

A t-test was conducted to test the differences in the level of substance and drug misuse between respondents with relatives who were involved in alcohol and those who do not have any relatives involved in alcohol. The result of the t-test is shown in Table 17.

Table 17: Level of Substance and Drug Misuse with Relatives Who Drink

| Relative drink alcohol | n | Mean | SD | t | p |
|------------------------|------|------|------|-------|-----|
| Yes | 376 | 1.11 | 2.56 | 5.742 | .00 |
| No | 6776 | 0.59 | 2.18 | | |



The result shows that there is a significant difference in the level of substance and drug misuse between respondents with relatives who are involved in alcohol and those who do not have any relatives involved in alcohol ($t_{[6778]} = 5.742, p < .05$). Respondents who have relatives who were involved in alcohol have a higher tendency for substance and drug misuse ($M = 1.11, SD = 2.56$) compared to those who do not have any relatives involved in alcohol ($M = .59, SD = 2.18$).

e. Relatives Involved in Drugs

A t- test was run to test the differences in the level of substance and drug misuse between respondents with relatives who were involved in substance and drugs and those who do not have any relatives involved in substance and drugs. The result of the t-test is shown in Table 18.

Table 18: Level of Substance and Drug Misuse with Relatives who Do Drugs

| Relatives involved with drugs | n | Mean | SD | t | p |
|-------------------------------|------|------|------|-------|-----|
| Yes | 221 | 1.26 | 3.30 | 4.885 | .00 |
| No | 6941 | 0.63 | 2.18 | | |

The result shows that there is a significant difference in the level of substance and drug misuse between respondents with relatives who are involved in substance and drugs and those who do not have any relatives involved in substance and drugs ($t_{[6778]} = 4.885, p < .05$). Respondents who have relatives who were involved in substance and drugs have a higher tendency for substance and drug misuse ($M = 1.26, SD = 3.30$) compared to those who do not have any relatives involved in substance and drugs ($M = .63, SD = 2.18$).

DISCUSSION

In the past, the study on substance and drug use among youth in Malaysia has not been conducted in a holistic manner to reflect



the actual gravity of the situation. Past and present data on youth drug use from the National Anti-Drugs Agency (NADA) and the Ministry of Education only reflects the “tip of the iceberg” of the problem at hand. It shows the numbers that has been positively tested and charged by court to undergo treatment and rehabilitation in institutional or community-based programs. To say the least, those students and adolescents who has tried illicit substance and drugs but not positively identified is not included in this numbers.

The other concern is that the profile of substance users and abusers among adolescents has not been thoroughly studied. Such data is imperative in formulating prevention and rehabilitation strategies to curb the demand for illicit substances in the country, especially among the younger generation. This concern is being addressed in this study. As such, this chapter will discuss on the findings the pattern of licit and illicit drugs among Malaysian youths and the implications for parents, educators and the government and researchers themselves.

The results are discussed with reference to the Substance and Drug Misuse Index (SDMI) and examined according to age and form level, ethnic group, gender, education aspirations, school type record of disciplinary offences, housing locations and family’s involvement with drugs.

PATTERN OF LICIT SUBSTANCE USE

According to the result, only 0.4% of the respondents reported using cigarette often and only a total of 13.9% reported using cigarettes. This figure is somewhat lower than what is estimated for Malaysian youth. If we look at WHO/WPRO (2003) statistics on smoking, it was found that among young teens (aged 13 to 15), about one in five (20%) smokes worldwide. It was also observed that between 80,000 and 100,000 children worldwide start smoking every day, and evidence shows that around 50% of those who start smoking in adolescent years go on to smoke for 15 to 20 years. In Malaysia, WHO estimated that about half of all Malaysian men smoke. Every day about 50 teenagers below the age of 18 start



smoking. Studies show about 30% of adolescent boys (aged 12 to 18) smoke (WHO/WPRO Smoking Statistics, 2003). Taking these data into account, it is quite possible that there is under reporting in cigarette smoking among the respondents.

Cigarettes is considered a licit substance because it is not illegal to be smoked in the country, however, it is illegal to sell it to individuals under the age of 18 years old. No studies have been done to ascertain if this law has reduced smoking among youth below the age of 18.

It is not too surprising to see the figure for abusing non-prescribed cough mixture to be at 4.1%, the use of inhalants is 0.8% and the use of ketum leaves extract are 2.9%. AADK recorded around 2.5% of those apprehended and charged as drug dependents in the year 2007 are youth under the age of 18 years old. However, what was found in this study is the use of substances which is not defined as illicit substance by law, other than codeine. For example, non-codeine based cough mixtures is a control item for its medical properties and it's readily available. But codeine based cough mixture is a controlled item under the 1953 Poison Act. The control of codeine based cough mixtures has been seriously enforced nevertheless there are evidences that the misuse is still rampant.

Inhalants are basically household items such as glue, paints and thinners that are not subjected to any control. The use, misuse and abuse of inhalants, especially known as glue sniffing have been frequently reported in the media and has created public concerns demanding for better control over the misuse of such substance. The government has since then, been drafting the Intoxication Act, modeling after UK, Singapore, Brunei and other countries to provide legal avenues for treatment and rehabilitation of youths and individuals dependent on inhalants.

Ketum leave extract on the other hand, is included as a controlled substance in the 1953 Poison Act, therefore are considered to be illicit then licit. However the present legal provision fines individuals who process ketum leaves have been shown to be a non-deterrent



for those involved in such illegal activities. Reports of ketum abuse have been observed in the northern and the east coast states of the peninsular. This study found that there are higher incidents of youth using ketum leaves extract in the state of Kedah and Perlis, however we cannot compare the misuse with other states since only three of these states have substantial respondents to make it possible for comparison. This higher incident is due to the availability of the ketum leaves or the tradition of using ketum leaf extract by the elderly in this region for health and traditional medicinal purpose. But on the issue of abuse, in one estimate made by AADK in the Kubang Pasu district, Kedah, it was found that about 1,200 youth consumed it. Reports of processing ketum leaves into ketum drinks are also observed in these areas. Further studies can be carried out to clarify this situation, because if it is due to the traditional practice, interventions could be carried out to deal specifically with areas that are already familiar with indigenous drugs such as ketum leaves.

Also, in the illicit drug category, the highest incident of substance misuse is alcoholic drinks (5%). However there was no (or unobserved) report of regular use. Having 'tried once' or occasional use would not be considered as serious for non-Muslim respondents, because it is quite acceptable by their culture (Chinese and Indians among others) that consuming alcohol is acceptable as long as it is done with due responsibilities. However, for Muslim respondents, even consuming alcohol once would be considered as a grave offence by definition of Islam. Despite strict religious rulings in Islam on the consumption of alcohol, the study observed Muslim adolescents still consuming alcoholic beverages at least in the 'tried once' category.

Why alcoholic beverages use/misuse is quite popular among the younger group? The availability of the substance can be considered as the main reason, besides the absence of stringent enforcement on the purchase of alcoholic drinks by minors. Peer pressure to conform to group norms (such as risk taking activities) may also be the reason for occasional or one time use; that we are looking at adolescents trying alcoholic drinks and not liking it or realizing it that its "*haram*".



The question that is posed here is that could the use and misuse of these substances at an early age lead to future drug use? More studies need to be undertaken to provide answers in the effort to prevent youth from experimenting with illicit drugs.

PATTERN OF ILLICIT SUBSTANCE USE

The pattern of substance and drug misuse are grouped into three categories, those used once (first time users), used them occasionally/ sometimes (those experimenting with the substance) and those who regular use/misuse them. However, it has to be noted that even if a person especially youth try any illicit substance even once, they can be categorized as belonging to a high risk group if it is compared to their peers who never try even once. These youth who are categorized as being high risk towards substance use and misuse are those using rolled cigarettes (7.9%); regular cigarettes (7.8%); 4.2% consuming alcoholic drinks and cough medication (3.3%).

For youth who regularly misuse illicit substance, they also smoke cigarettes (5.7%); 2.8% used rolled cigarettes; 1.0% used ATS; 0.9% said they consumed ketum leaves; 0.8% used non -prescribed cough medication, alcoholic drinks and psychoactive pills; 0.6% used marijuana and 0.5% used cigar and pipe/tobacco products.

Among the substance abuse category, it was observed that 0.5% abused ketum, 0.4% abused psychoactive pills and 0.3% abused marijuana and ATS.

It was also observed that the use/misuse of psychoactive pills (2.3%) is higher than other drugs. This is because such pills were believed by some students to be able to aid them in staying awake, and therefore used to stay up for the purpose of studying for exams. Many pills such as up-john and other mild stimulants are distributed by small time pushers for a small profit and often used to support and fulfill their drug dependence needs.

The use of methamphetamine such as syabu and ecstasy (1.3%), marijuana (1.7%), heroin (0.6%), opium (0.6%) and morphine (0.5%) reflect lesser numbers of abusers because regular misuse means



that these youths are already dependent onto the substance. The types of substances misused here are also categorized as heavy drugs such as ATS, heroin and morphine otherwise are not used by first timers or occasional experimental users. Here, dependency means that these adolescents have misused the substance for a longer period but not identified by the authorities. A number of them are not in the school system, either dismissed because of disciplinary grounds or refuse to attend schools and drop-outs because they are neither interested nor motivated to study.

FACTORS INFLUENCING SUBSTANCE USE

Many of the findings on the pattern of drug abuse here bear similarities with findings in other studies on adolescents and drug abuse. For example, males showed a higher prevalence of drug usage as compared to females (Benson *et al.*, 1989; Home Office UK, 1977) and correlational analysis showed that older respondents have a higher tendency for abusing drugs (Kaufman, 1979; Milgram, 1982). Non-schooling respondents have higher drug misuse index as compared to schooling respondents (McKenzie, 1982, UN, 2007). However family income was not found to be significantly related to drug misuse (Wills *et al.*, 1992; Barnes, 1990; Clifford, 1989).

Drug misuse among family members has also been seen to contribute to adolescent's involvement with drugs of all kinds. This is not surprising as other studies have also shown this to be true (Barnes, 1990; Beman, 1995). In fact, other aspects of family functioning, family dynamics (including family strengths and family coping mechanisms), family crises and family dysfunction are factors that are related to adolescent's drug use (Muisener, 1994). Drug use among family member influences the development of the adolescence in a negative way, besides acting as a model and justification for adolescence's substance use.

Students living in the cities scored the highest in the drug misuse index as compared to others and those who lived in small towns had the lowest score. This is because alcohol and illicit drugs are more available in urban areas as compared to rural areas. Data from AADK (2007) also showed that most of drug addicts were



from the urban centros such as Kuala Lumpur, Johor Bahru, Ipoh and Penang, thus indicating that more supplies are present and available in these areas.

However, it is quite surprising to find that those living in the rural area scored the second highest compared to other categories. The availability of licit substance such as ketum, on the other hand is more prominent in the rural areas. This has been observed in many rural areas such as the northern and east coast states. Ketum leaves are traditionally consumed by the elders working on paddy fields and other agricultural sector and this traditional preparation is used to boost their energy to perform their daily task. However, now the younger generations living in rural areas have been misusing ketum leaves by mixing them with other substances to obtain a state of euphoria or “high”. Some other worse scenarios were observed when heroin addicts used ketum extracts when they could not obtain opiate drugs to fulfill their daily needs. These are probably some of the reasons why respondents from rural areas scored reasonably high on the SDMI.

Other Protective Factors

Protective factors means features, relationships, environment, personality, social and cultural context that aid youth to avoid experimenting with licit or illicit substance and drugs. There is a multitude of protective factors that has been identified, among others are familial control, choice and their circle of friends, early drug education, the environment they grew up in and religious education. Among those observed from this study is that youth who had aspirations for graduate studies scored significantly lower on the substance and drug misuse index (SDMI) as compared to those who only aspire for a lower academic target or aspiration such as certificates and diploma. Prefects also scored lower drug misuse index as compared to non prefects and those with disciplinary problems and school related offences scored significantly higher drug misuse index as compare to those without problems.

These findings are in similar with previous observations made by Mahmood *et al.* (1997) when they studied social ill behaviors among youth in the state of Kedah. This can be contributed to their peers and pressures from social group for the purpose of



group compliance and conformity. Youth with high educational aspirations are usually those who perform well in their studies and tend to group together with other high performers. So are the prefects, like birds of the same feathers flocked together. These categories of students and youth are not usually associated with disciplinary and other social problems, therefore were less exposed to substance use and misuse.

However those with disciplinary problems usually have friends who are involved with disciplinary problems too. In other words, it depends on the type of friends that youth have and the kind of influence that they have on each other. It has been repeatedly shown that youth are mostly influenced by their peers and that the choice of friends will in part determine their social behaviors or misbehaviors (Benson *et al.*, 1989; Donahue *et al.*, 1995; Khairuddin, 1994; Mahmood, 2002).

IMPLICATION OF THE STUDY

The significance of this study mainly focus on the utilitarian value of its findings, that it is imperative to obtain detailed information pertaining to protective, risk and resistance factors to substance and drug use, misuse and abuse among the adolescents. In addition, it also focuses on the future need for a trend analysis of drug use pattern among youth in Malaysia. All this information is important for the formulation of drug education and prevention programs for the youth population.

A longitudinal study of substance and drug use, misuse and abuse among youth must be conducted to provide data, trends and long term analysis pertaining to the number one enemy of the nation. Such studies should model after the “Monitoring the Future” study conducted by the University of Michigan to monitor and trace drug use among the American youth. Such study will be able to provide imperative data for future drug policy, especially for Malaysian youth.

The implications of this study are mostly towards the formulation of a more accurate and evidence-based drug prevention program



for youth. Among others, demographical factors should be taken into consideration when planning for prevention and intervention programs. Lower risk area can make do with general national level early intervention program, while more focus must be provided to high risk zone such as urban centres and rural areas.

This study has identified several risk and protective factors. Risk factors can be used for screening of high risk groups at schools. In addition to the Student Intervention Program (PIP) that is conducted by AADK, this group may be further studied in order to come up with more effective plans for secondary and tertiary drug prevention programs.

Prevention education and program that include family, peer group and environment can be considered. One example is related to peer-based program. Since many youth claims that the reason for them using drugs is because of influence from peers, therefore it is logical to develop some peer support program to aid those experimenting with substance or drugs to avoid further use. Peers are best to advice peers of the same gender and age group. Thus such program can be design for in school environment, but more importantly, should be in the community setting.

In addition, programs to promote development of protective factors at individual level and family level should be carried out. These programs has to be conducted in relation with the milieu of the adolescents such as relevant to their demography, for example, programs for those at lower and medium socio-economic status, for those who stay in flats and apartments, in kampong areas and in taman or residential parks. Similarly, there should be consideration for those who like to go clubbing or other recreational activities like picnics, sports and alike. Specific programs for high risk group like Mat Rempit should also be considered because of their high risk behaviors.

Family values should be promoted as part of general intervention strategy. Familial factors such as cohesion and communications that has been identified as protective factors should be enhanced as means to prevent future drug use and misuse among youth.



Religiosity should be seriously considered as a strong protective factor. As such, programs to raise the level of religiosity among adolescents and the population in general should be planned and implemented accordingly. Factors related to religiosity must be identified so as to integrate them in the drug education program.

In conclusion, even though youth has been repeatedly identified as the group that is at risk towards substance use and misuse, among other high risk behaviors, however their candidness, flexibility, willingness to receive a multitude of propositions including drug prevention and intervention programs should be considered to mould them towards a productive citizen for our future nation.

REFERENCES

- Alibrandi, T. (1978). *Young alcoholics*. Minneapolis. MN.: Comp Care.
- Agopian, M. W. & Becker, H. K. (1990). *Evaluation of Drug Abuse Resistance Education (DARE) in the Long Beach Unified School District: Final report*. Long Beach: California State University, Criminal Justice Department.
- Anhalt, H. L. & Klein, M. (1976). Drug abuse in junior high school populations. *American Journal of Drug and Alcohol Abuse*, 3, 589-603.
- Aniskiewicz, R. E. & Wyson, E. E. (1987). *Project DARE evaluation report: Kokomo schools, Spring 1987*. Kokomo: Indiana University.
- Arkin, R. M., Roemhild, H. J., Johnson, C. A., Luepker, R. V. & Murray, D. M. (1981). The Minnesota smoking prevention program: A seventh grade health curriculum supplement. *Journal of School Health*, 51, 616-661.
- Belsito, R. (1996). *Drug Abuse Resistance Education program evaluation 1995-96*. Fort Lauderdale: Broward County Schools.
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Barnes, G. M. (1990). Impact of the family on adolescent drinking patterns. In L. Collins, K. Leonard & J. Searles, (Eds.) *Alcohol and the family: Research and clinical perspectives*. New York: Guilford Press.



- Beman, D. (1995). Risk factors leading to adolescent substance abuse. *Adolescence*, 30, 117, 201 – 207.
- Bennett, G. (1983). Youthful substance abuse. In G. Bennett, C. Vourakis & D. S. Woolf (Eds.), *Substance abuse: Pharmacologic, developmental and clinical perspectives* (pp. 156-174). New York: John Wiley & Sons.
- Berberin, R. M., Gross, C., Lovejoy, J., & Paparella, S. (1976). The effectiveness of drug education programs: A critical review. *Health Education Monographs*, 4, 337-397.
- Beschner, G. M. (1989). The problem of adolescent drug abuse: An introduction to intervention strategies. In G. M. Beschner & A. S. Friedman (Eds.), *Treatment services for adolescent substance abusers* (DHHS Publication No. ADM 89-1342, pp. 1-12). Rockville, MD: National Institute on Drug Abuse.
- Benson, P. L., & Donahue, M. J. (1989). Ten-year trends in at-risk behaviors: A national study of black adolescents. *Journal of Adolescent Research*, 4 (2), 125-139
- Bepko, C. & Krestan, J. (1985). *The responsibility trap*. New York: The Free Press.
- Botvin, G. J. (1982). Broadening the focus of smoking prevention strategies. In T. Coates, A. Petersen, & C. L. Perry (Eds.), *Promoting adolescent health: A dialogue on research and practice* (pp. 137-148). New York: Academic Press.
- Botvin, G. J. (1990). Substance abuse prevention theory, practice, and effectiveness. In M. Tonry & J. Q. Wilson (Eds.), *Drugs and crime: Annual review of research in crime and justice*, Vol. 13 (pp. 461-519). Chicago: University of Chicago Press.
- Botvin, G. J., Baker, E., Renick, N., Filazzola, A. D & Botvin, E. M. (1984). A cognitive-behavioral approach to substance abuse prevention. *Addictive Behaviors*, 9, 137-147.
- Botvin G. J. & Dusenbury, L. (1987). Substance abuse prevention and the promotion of competence. In L. S. Bond & B. E. Compas (Eds.), *Primary Prevention and Promotion in the Schools* (pp. 146-178). Newbury Park, CA: Sage.
- Botvin, G. J. & Eng, A. (1980). A comprehensive school-based smoking prevention. *Journal of School Health*, 50, 209-213.
- Botvin, G. J. & Eng, A. (1982). The efficacy of a multi-component approach to the prevention of cigarette smoking. *Preventive Medicine*, 11, 199-211.



- Botvin, G. J., Eng, A. & Williams, C. L. (1980). Preventing the onset of cigarette smoking through Life Skills Training. *Preventive Medicine*, 9, 135-143.
- Botvin, G. J., Renick, N. & Baker, E. M. (1983). The effects of scheduling format and booster sessions on a broad spectrum psychosocial approach to smoking prevention. *Journal of Behavioral Medicine*, 6, 359-379.
- Bowen, M (1978). *Family therapy in clinical practice*. New York: Jason Aaronson.
- Brown D.R. & Gary L.E. (1994). Religious involvement and health status among African-American males. *Journal of the National Medical Association*, 86(11): 825-831.
- Brown, T. M., Parks, G. S., Zimmerman, R. S. & Phillips, C. M. (2001). *The role of religion in predictiong adolescent alcohol use and problem drinking*. Department of Psychology, University of Kentucky.
- Brook, J. S., Whiteman, M. & Gordon, A. S. (1983). Stages of drug use in adolescence: Personality, peer and family correlates. *Development Psychology*, 19, 2, 269 – 277.
- Bukoski, W. J. (1986). School-based substance abuse prevention: A review of program research. *Journal of Children in Contemporary Society*, 18, 93-115.
- Campbell, D. T. & Stanley, J. C. (1963). *Experimental and quasi-experimental designs for research*. Boston: Houghton-Mifflin Company.
- Carr, M. C. & Vandiver, T. A. (2001). Risk and protective factors among youth offenders. *Adolescence*, 5, 36-51.
- Center for the Study of Religion and Psychology. (2005). *Religious Scales Project*. Retrieved February 15 2006, from <http://www.bu.edu/danielsen/research>
- Clayton, R. R., Catarello, A. M. & B.M. Johnstone. (1996). 'The Effectiveness of Drug Abuse Resistance Education (Project D.A.R.E.): Five-Year Follow-up Results. *Preventive Medicine* 25: 307-318.
- Clayton, R. R., Cattarello, A., Day, L. E. & Walden, K. P. (1991). Persuasive communications and drug abuse prevention: An evaluation of the DARE program, In L. Donohew, H. Sypher & W. Bukowski (Eds.), *Persuasive communication and drug abuse prevention* (pp. 295-313). Hillsdale, NJ: Lawrence Earlbaum Associates.



- Clayton, R. R., Cattarello, A., & Walden, K. P. (2000). Sensation seeking as a potential mediating variable for school-based prevention interventions: A two-year follow-up of DARE. *Journal of Health Communications*, 12, 69-75.
- Clifford. M. W. (1989). A comparison of families with hospitalized substance abusing adolescent to families with hospitalized non-abusing adolescent and non-dysfunctional families on cohesion, adaptability, communication and self esteem. *Dissertation Abstract International*, 49, (12-A), 3869.
- Coupey, S. M. & Schonberg, S. K. (1982). Evaluation and management of drug problems. *Adolescents Pediatric Annuals*, 11, 653-658.
- Criminal Justice Statistics Association. (1990). *Evaluating drug control initiatives: Conference proceedings*, June 20-22, Washington, DC: Author.
- Dahlberg, L., Susan B. & Behrams, C. B. (1998). *Measuring violence related attitudes, beliefs, and behaviors among youths: A compendium of assessment tools*, from <http://www.cdc.gov/ncipc/pub-res/measure.htm>
- DeJong, W. (1987). A short-term evaluation of project DARE (Drug Abuse Resistance Education): Preliminary indications of effectiveness. *Journal of Drug Education*, 17, 279-294.
- Donahue, M. & Benson, E. L. (1995). Religion and the well-being of adolescents. *Journal of Social Issues*, 51, 145-160.
- Doherty, W.J. & Hovander, D. (1990). Why don't family measures of cohesion and control behave the way they're supposed to? *The American Journal of Family Therapy*, 18, 1, 5-20.
- Donnermeyer, J. F. (1998). Prevention Education and Substance Use, *Journal of School Health*, 68, 731-753.
- Dukes, R., Stein, J. & Ullman, J. (1996). "The Long Term Effects of DARE". *Evaluation Review* 20: 49-66.
- Dukes, R., Stein, J. & Ullman, J. (1997). "The Long Term Effects of DARE". *Evaluation Review* 21: 473-500.
- Earle, R. B. (1987). *Evaluation of the Illinois state police DARE pilot program*. Springfield, IL: A. H. Training and Development Systems, Inc.
- Einstein, S. (1981). Understanding drug user treatment evaluation: Some unresolved Issues. *International Journal of Addictions*, 16, 381-400.



- Elkin, M. (1984). *Families under the influence*. New York; W. W. Norton and Co. Inc.
- Elliot, D. S. & Huizinga, D. (1984) . *The relationship between delinquent behavior and ADM problems* (The Nation Youth Survey Project Report No. 28). Boulder: University of Colorado, Behavioral Research Institute.
- Ennett, S. T., Tobler, N. S. Ringwalt, C. L. and Flewelling, R. L. 1994. "How Effective is Drug Abuse Resistance Education? A Meta-Analysis of Project D.A.R.E." Outcome Evaluations. *American Journal of Public Health*, 84: 1394-1401.
- Ennet S.T., Rosenbaum D.P., Flewelling R.L, Bieler G.S., Ringwalt C.L. & Bailey S.L. (1994). Long-term Evaluation of Drug Abuse Resistance Education. *Addictive Behaviours*. 19, 113-125.
- Erikson, E.H. (1963). *Childhood and society*. New York: W.W. Norton.
- Evaluation and Training Institute. (1990). *DARE evaluation report for 1985-1989*. Los Angeles, CA: Author.
- Evans, R. I. (1976). Smoking in children: Developing a social psychological strategy of deterrence. *Preventive Medicine*, 5, 122-127.
- Fagan, C. N. (1989). Individual and family power dynamics in adolescent substance abuser. *Dissertation Abstracts International*, 49, (8-B), 3435.
- Faine, J. R. (1989) . *DARE in Nashville schools 1988-1989: An evaluation of the Drug Abuse Resistance Education program*. Bowling Green: Western Kentucky University, Social Research Laboratory.
- Faine, J. R., & Bohlander, E. (1988). *Drug Abuse Resistance Education: An assessment of the 1987-1988 Kentucky State Police DARE program*. Bowling Green: Western Kentucky University, Social Research Laboratory.
- Faine, J. R. & Bohlander, E. (1989). *DARE in Kentucky schools 1988-89: An evaluation of the Drug Abuse Resistance Education program*. Bowling Green: Western Kentucky University, Social Research Laboratory.
- Faulkner, J. E. & DeJong, G. F. (1965). *Religiosity in 5-D: An Empirical Analysis*. Paper presented at the American Sociological Association Convention, Chicago.
- Fergusson, D. M. & Lynskey, M. T. (1996). Adolescent resiliency to family adversity, *Journal of Child Psychology & Psychiatry*, 37 (3), 281–292.
- Feigleman, B. & Feigleman, W. (1993). *Treating the adolescent*



- substance abuser: Clinical work with substance abusing clients*. New York: The Guilford Press.
- Fishman, H. C. (1988). *Treating troubled adolescents: A family therapy approach*. New York: Basic Books.
- Flay, B. R., D'Avernas, J. A. Best, M. W., Kersall, J. R. & Ryan. K. B. (1983). Cigarette Smoking: Why Young People do it and Ways of Preventing it. In *Pediatric and Adolescent Behavioral Medicine*. New York: Springer-Verlag.
- Flay, B. R. 1985. "Psychosocial Approaches to Smoking Prevention: A Review of Findings." *Health Psychology*, 4: 449-488.
- Flemming, J. P., Kellam, S. G. & Brown, C. H. (1982). Early predictors of age at first use of alcohol, marijuana, and cigarettes. *Drug and Alcohol Dependence*, 9, 285-303.
- Foxcroft, D. R. & Lowe, G. (1995). Adolescent drinking, smoking and other substance use involvement: Links with perceived family life. *Journal of adolescence*. 18, 159 - 177.
- Francis, I. J. & Mullen, K. (1993). Religiosity and attitude towards drug use among 13 - 15 years old in England, *Addiction*, 88 (5), 665 - 672.
- Francis, L. J. (1997). The impact of personality and religion on attitudes towards substance use among 13-15 year olds. *Drug and Alcohol Dependence*, 44, 95-103.
- Freud, A. (1968). Adolescence. In A.E. Windsor, & D.L. Angus (Eds.), *Adolescence: Contemporary studies*. New York: Van Nostrand.
- Freud, A. (1968). The writing of Anna Freud: The Ego and the mechanisms of defense. Michigan: Turbo Lister.
- Friedman, A. S., Utada, A. & Morrissey, M. (1987). The families of adolescent drug abusers are rigid: are these families either disengaged or enmeshed of both? *Family Process*, 26, 131 - 148.
- Fritz, J. G. (1989). Patterns of family interaction and the effectiveness of structural/strategic family therapy with adolescent substance abuser. *Dissertation Abstract International*, 50 (3-B), 1106.
- Frydenberg, E. & Lewis, R. (1993). Boys play sport and girls turn to others: Age, gender and ethnicity as determinants of coping. *Journal of Adolescence* 16: 252-266.
- Glock, C. & Stark, R. (1965). *Religion and society in tension*. Chicago: Rand McNally.
- Glock, C. & Stark, R. (1966). *Christian beliefs and anti-Semitism*.



- New York: Harper and Row.
- Gordon, N. P. & McAlister, A. L. (1982). Adolescent drinking: Issues and research. In T. J. Coates, A. C. Peterson & C. Perry (Eds.), *Promoting adolescent health: A dialog on research and practice* (pp. 201-223). New York: Academic Press.
- Gottfredson, G. D. (1990). *What about You, Form B, Research Edition: Development and applications of an inventory for assessing risk of drug involvement*. Baltimore, MD: Johns Hopkins University, Center for Social Organization of Schools.
- Greenwald, S. (2000). Religiosity and Substance Use and Abuse among Adolescents in the National Comorbidity Survey. *Journal of American Academy of Child and Adolescent Psychiatry*, 39(9), 1190-1197.
- Hamburg, B. A., Braemer, H. C. & Jahnke, W. A. (1975). Hierarchy of drug use in adolescence: Behavioral and attitudinal correlates of substantial drug use. *American Journal of Psychiatry*, 132, 1155-1167.
- Hansen, W. B. 1992. "School-Based Substance Abuse Prevention: A Review of the State of the Art in Curriculum, 1980-1990." *Health Education Research* 7: 403-430.
- Hansen, W. B., Johnson, A. J., Flay, B. R., Graham, J. W. & Sobel, J. (1988). Affective and social influences approaches to prevention of multiple substance abuses among seventh grade students: Results from project SMART. *Preventive Medicine*, 17, 135-154.
- Hanson, D. J. (1980). Drug education: Does it work? In F. R. Scarpitti and S. K. Dantesman (Eds.), *Drugs and the Youth Culture* (pp. 251-282). Beverly Hills: Sage.
- Harmon, M.A. (1993). Reducing the risk of drug involvement among early adolescents: An evaluation of DARE. *Evaluation Review*, 17, 2, 221-239.
- Haley, J. (1977). *Problem solving therapy*. San Francisco: Josey-Bass.
- Haley J. (1980). *Leaving home*. New York: McGraw Hill.
- Hawkins, J. D., Catalano, R. F. & Miller, J. Y. (1992). Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance abuse prevention. *Psychological Bulletin*, 112, 64-105.
- Hawkins, J. D., Catalano, R. F., & Arthur, M. (2002). Promoting



- Science-Based Prevention in Communities. *Addictive behavior*, 90 (5), 1-26.
- Hawaii State Department of Education (1989). The partnership in character education project. U. S Department of Education.
- Home Office U. K (1997). Crime in England and Wales 2006/07.
- Hodge, D. R. & Montoya, H. (2001). Substance use: Spirituality and religious participation as protective factors among rural youths. *Social Work Research*, 35, 24-40.
- Hubbard, R. L., Cavanaugh, E. R., Graddock, S. G. & Rachal, J. V. (1983). *Characteristics, behaviors and outcomes for youth in TOPS study* (Report submitted to National Institute on Drug Abuse under Contract No. 271-79-3611). Research Triangle Park, NC: Research Triangle Institute.
- Izet Pajevic. (2003). *The impact of religiosity on the adolescent's mental health development and health*, from <http://www.healthbosnia.com/press/novosti/new068e.htm>
- Jenkinson, C. (1998, April 15 2002). *Measuring health status and quality of life*. Retrieved March 20, 2003, from <http://qb.soc.surrey.ac.uk/topics/health/jenkinson.htm>
- Jessor, R., & Jessor, S. L. (1977). *Problem behavior and psychosocial development: A longitudinal study of youth*. New York: Academic Press.
- Johnston, L. D. (1973). *Drugs and American youth*. Ann Arbor: University of Michigan, Institute for Social Research.
- Johnston, L. D., Bachman, J. G. & O'Malley, P. M. (1991). Press release from the University of Michigan News and Information Services: January 23, 1991. Ann Arbor: University of Michigan, Institute for Social Research.
- Johnson, V. & Pandima, R. J. (1991). Effects of the family environment on adolescent substance use, delinquency and coping style. *American Journal of Drug and Alcohol Abuse*, 17 (1): 71 - 88.
- Jurich, A. P., Polson, C., Jurich, J. & Bates, R. E. (1985). Family factors in the live of drug user and abusers. *Adolescence*, XX, 143 - 159.
- Kandel, D.B. (1980) Drug and Drinking Behaviour among Youth. *Annual Review of Sociology*, 6, 235-285.
- Kandel, D. B. (1978). Convergence in prospective longitudinal surveys of drug use in normal populations. In D. B. Kandel (Ed.), *Longitudinal Research on drug use: Empirical findings and*



- methodological Issues* (pp. 3-38). Washington, DC: Hemisphere-Wiley.
- Kandel, D. B., Kessler, R. C. & Margulies, R. S. (1978). Antecedents of adolescent initiation into stages of drug use: A developmental analysis. *Journal of Youth and Adolescence*, 7, 13-40.
- Kaufman, P. (1979). Family therapy with adolescent substance abuser. In E. Kaufman & P. Kaufman (Eds.). *Family therapy of drug and alcohol abuse*. New York: Gardner Press Inc.
- Khan, Y. (1995). Attitudes of Pakistani women towards seeking psychological help. Unpublished dissertation. Chicago School of Professional Psychology II.
- Khairuddin Yusof (1994). *Knowledge, attitudes and perception related to drug abuse in Peninsula Malaysia with additional focus on parents and adolescents*. Research Report, Universiti Malaya.
- Kinder, B., Pape, N. & Walfish, S. (1980). Drug and alcohol education programs: A review of outcome studies. *International Journal of Addictions*, 7, 1035-1054.
- Khashan, H. & Kreidie, L. (2001). The social and economic correlates of Islamic religiosity. *World Affairs*, 164(2), 83-96.
- Kutter, C. J. & McDermott, D. S. (1997). The role of church in adolescent drug education. *Journal of Drug Education*, 27, 293-305.
- Lindstrom, P. 1996. "Partnership in Crime Prevention: Police-School Cooperation." Paper presented at annual convention of the *American Society of Criminology*, Chicago.
- Lloyd, J., Hurry, C. & Ashton, B. (2000). The effectiveness of primary school drug education. *Drug: Education, Prevention and Policy*, 7, 109 - 126.
- Loeber, R. & Le Blanc, M. (1990). Toward a developmental criminology. In M. Tonry & N. Morris (Eds.), *Crime and Justice: A review of research*, Vol. 12 (pp. 375-473). Chicago: University of Chicago Press.
- Mackay, R. (2003). Family resilience and good child outcomes: an overview of the research literature. *Social Policy Journal of New Zealand*. 3, 65-72.
- MacDonald, D. I. & Newton M. (1981). The clinical syndrome of adolescent drug abuse. *Advances in Pediatrics*, 8, 1-25.
- Mahmood, N. M., Nadiyah Elias, Noor Azizah Ahmad, Saedon Awang, & Ahmad Marthada (1997). *Kajian gaya hidup sihat remaja negeri Kedah*. Al- Bukhary Foundation, Kedah Islamic



- Development Foundation and Kedah Youth Council Research Grant. Contract Research Report, UUM-MBK.
- Mahmood, N. M. (2002). The involment of youth with problems in NGO towards service to society, *Proceedings of the National social Work Conference: Youth and NGO in Social Work*, Sintok. UUM Publisher.
- Mahmood, N. M., Mohamad Hassan, & Yahya Don (2003). Program motivasi Skim Lencana Anti Dadah (SLAD): Penilaian harga diri selepas enam bulan menjalani program. Paper presented at the *Malaysian Psychology Conference. The role of Psychology in Education*, 9 - 11 May, Langkawi.
- Mahmood, N. M. & Mohamad Hassan (2003). Perubahan terhadap pengetahuan pelajar mengenai dadah selepas menjalani program pencegahan awalan. Paper presented at the *Malaysian Psychology conference. The role of Psychology in Education*, 9 - 11 May, Langkawi.
- Mahmood, N. M. & Yahya Don (2003). Strategi pencegahan penagihan semula (relapse): proses berterusan untuk mengekalkan kepulihan. Paper presented at the *Counseling Seminar: relapse prevention to promote lifelong recovery*, 3rd July, Alor Setar, Kedah.
- Mahmood, N. M. & Yahya Don (2004a). Keberkesanan program pendidikan pencegahan awalan dadah (PINTAR). Research Report, UUM-IRPA.
- Mahmood, N. M. & Yahya Don (2004b) Memulihkan penagih dadah melalui pengawasan: masalah, kekangan dan keberkesanan. *Proceeding of the 3rd National Seminar of Psychology and Society*, Bangi, Malaysia.
- Mahmood, N. M. & Yahya Don (2004c). Memertabatkan erti dan nilai kehidupan penagih dadah di Malaysia: Cabaran dan Harapan. Paper presented at *Seminar Antarabangsa Nilai dan Komuniti Pasca Moden (SIVIC 2004)*, 4 - 6 September, Langkawi.
- Malkus, B.M. (1992). Family dynamic and structural factors as correlates of adolescent substance abuse: A comparison of families of non-substance abuser and substance abuser. *Dissertation Abstract International*, 53 (4-A), 1287.
- Maxwell, R. (1991). *Kid, alcohol, and drugs*. New York: Ballantine Books.
- Mackenzie, R. G. (1982). The adolescent as a drug abuser: A



- paradigm for intervention. *Pediatric Annals*, 11, 659-668.
- Malvin, J. J., Moskowitz, J., Schaps, E. & Schaeffer, G. (1985). Evaluation of two School-based alternatives programs. *Journal of Alcohol and Drug Education*, 30, 98-108.
- Maltby, J. (1999). The internal structure of a derived, revised, and amended measure of the religious orientation scale: The "Age-Universal" I-E Scale. *Social behavior and Personality*, 27(4), 407-412.
- Markstrom, C. (1999). Religious involvement and adolescent psychosocial development. *Journal of Adolescence*, 22, 205–221.
- Marthai, R. (1980). *Construction and validation of a measure of phenomenal process religious maturity*. [abstract].
- Manos, M. J., Kameoka, K. Y. & Tanja, J.H. (1986). *Evaluation of Honolulu Police Department's Drug Abuse Resistance Education project* (Report No. 329). Manoa: University of Hawaii-Manoa, School of Social Work, Youth Development and Research Center.
- Mason, W. A. & Windle, M. (2001). Family, Religious, School and Peer Influences on Adolescent Alcohol Use: A Longitudinal Study, *Journal of Studies on Alcohol*, (62), 44-53.
- Mauzey, E. D. (2004). Spirituality and religion: Implications for counselors, *Journal of Counseling and Development*, 56, 136-145.
- McCandless, B. & Evans, E. (1973). *Children and youth: Psychological development*. Hinsdale, IL: Dryden.
- McDonald, R. P. (1985). *Factor analysis and related method*: Hillsdale, NJ: Lawrence Erlbaum.
- McDonald, L. (1993). *Families and Schools Together (FAST)*. Final Report. Washington, DC: U.S. Department of Health and Human Services, Office of Human Development Services, Administration for Children and Families.
- Merrill, R. M., Salazar, R., Richard, D. & Gardner, N. W. (2001). Relationship between family religiosity and drug use behavior among youth. *Social Behavior & Personality*, 29(4), 347-357.
- Milgram, G. G. (1987). Alcohol and drug education programs. *Journal of Drug Education*, 17, 43-57.
- Miller, W.R. & Thoresen, C.E. (2003). Spirituality, religion and



- health: An emerging research field. *American Psychologist* 58(1), 24-35.
- Miller, D. (1973). The medical and psychological therapy of adolescent drug abuse. *International Journal of Child Psychotherapy*, 2, 309-330.
- Mockabee, S. T., Monson, J. Q. & Grant, J. T. (2001). Measuring religious commitment among Catholics and Protestants: A new approach. *Journal for the Scientific Study of Religion*, 40(4), 675-690.
- Mohd Yusuf Ismail. (1998). *Hubungan konsep sendiri dan penghayatan ugama di kalangan pelatih pusat pemulihan akhlak*. Unpublished bachelors thesis, Universiti Kebangsaan Malaysia.
- Monopolis, S. & Savage, C. (1982). Substance abuse, public health, and the pediatrician. *Pediatrician*, 1, 176-196.
- Muisener, P. (1994). *Understanding and treating adolescent substance abuse*. Thousand Oaks, CA: Sage publications.
- Muaalim, M. A. (2003). *Tertiary student's value orientations for learning*. Paper presented at the 2nd International Seminar on Learning and Motivation: Issues and challenges in a borderless world, Penang.
- Nadiyah Elias, Mohd Noor Habibi, Amir Awang & Mahmood N. M. (2003, May 11- 13). *Skala komitmen tingkah laku keagamaan: Penilaian awal kebolehpercayaan, kesahan gagasan dan beberapa perkaitan*. Paper presented at the Annual Conference of Malaysian Psychological Association, Langkawi.
- National Institute on Drug Abuse. (1981). *Effectiveness of drug abuse treatment programs*. (Publication No. ADM 81-1143). Rockville, MD.
- Nyre, G. F. (1985). *Final evaluation report, 1984-1985, project DARE* (Drug Abuse Resistance Education). Los Angeles: Evaluation and Training Institute.
- Nyre, G. F. (1986). *DARE Evaluation Report, 1985-1986 Project DARE* (Drug Abuse Resistance Education). Los Angeles, CA: Evaluation and Training Institute.
- Nyre, G. F., & Rose, C. (1987). *Drug Abuse Resistance Education (DARE) longitudinal evaluation annual report*. Los Angeles, CA: Evaluation and Training Institute.
- Ogborne, A. C. (1978). Patient characteristics as predictors of



- treatment outcomes for alcohol and drug abusers. In Y. Israel, F. B. Glaser, H. Kalant, R. E. Popham, W. Schmidt & R. G. Smart (Eds.), *Research advances in alcohol and drug problems*, (pp. 177-223). New York: Plenum Press.
- Olson, D. H., Sprenkle, D. H., & Russell, C. S. (1979). Circumflex model of marital and family system: Cohesion and adaptability dimensions, family types and clinical applications. *Family Process*, 18, 3 - 28.
- Olson, D. H. (1986). Circumflex model VII: Validation studies and FACES III. *Family Process*, 25 (3), 337 - 351.
- Oxford, M. L. (2001). Preadolescent predictors of substance initiation: A test of both the direct and mediated effect of family social control factors on deviant peer associations and substance initiation. *American Journal of Drug and Alcohol Abuse*, 56, 365-378.
- Palmer, P.A. (1989). Family type and incidence of adolescent depression conduct disorder and substance abuse among adolescents in an inpatient psychiatric setting. *Dissertation Abstract International*, 49, (8-B) 3472.
- Parents, P. F. (2005). *Drug abuse risk factors*, from <http://www.findarticles.com/> FindArticles>Pediatricsfor Parents>Jan, 2002>Article
- Pearce, L. D. & Haynie, D. L. (2004). Intergenerational Religious Dynamics and Adolescent Delinquency. *Social Forces*, 82(4), 1553-1562.
- Pecchia, D. J. (1991). *Drug Abuse Resistance Education: An evaluation of the DARE and Counteract programs implemented in Robbinsdale Minnesota Independent School District 281*. Unpublished master's degree, St. Cloud State University, St. Cloud, MN.
- Preli, R., Protinsky, H. & Cross, L. (1990). Alcoholism and family structure. *Family Therapy*, XVII, 1, 38 -47.
- Protinsky, H. & Shilts, L. (1990). Adolescent substance use and family cohesion. *Family Therapy*, XVII, 2, 162 - 175.
- Perry, C. L., Killen, J., Slinkard, L. A. & McAlister, A. L. (1980). Peer teaching and smoking prevention among junior high students. *Adolescence*, 9, 277-281.
- Pisani, E. (2002). *Estimating the size of population at risk for HIV:*



- Issues and methods.* A joint UNAIDS/IMPACT/FHI workshop, May.
- Polich, J. M., Ellickson, P. L., Reuter, P., & Kahan, J. P. (1984). *Strategies for controlling adolescent drug use.* Santa Monica, CA: RAND Corporation.
- Poulson, R. L., Eppler, M. A., Satterwhite, T. N., Wuensch, K. L. & Bass, L. A. (1988). Alcohol consumption, strength of religious beliefs, and risky sexual behavior in college students. *Journal of America College Health*, 46(5), 227-232.
- Project DARE: How's it doing? (1990, Spring). Prevention File, pp. 16-18.
- Reilly, D. M. (1975). Family factors in the etiology and treatment of youthful drug abuse. *Family Therapy II*, 149 - 171.
- Reineck, R. C. (1988). A longitudinal study of the relationship between family cohesion and adolescent strain, resources, and substance using behaviors. *Dissertation Abstract International*, 48 (9-B), 2823
- Rigney, B. A. (2001). *The relationship between religiousness, social support, readiness for behavior change and continued substance abuse in mothers who have used illegal drugs during pregnancy (abstract).* Unpublished Ph.D thesis, University of Maryland, Baltimore County.
- Richards, L. G. (1980). The epidemiology of youthful drug use. In F.R. Scarpitti & S. K. Datesman (Eds.), *Drugs and the youth culture* (pp. 33-57). Beverly Hills: Sage.
- Ringwalt, C., Ennett, S. T. & Holt, K. (1991). An outcome evaluation of DARE (Drug Abuse Resistance Education). *Health Education Research Theory and Practice*, 6, 327-337.
- Ringwalt, C. R., Curtin, T. R. & Rosenbaum, D. P. (1990). *A First Year Evaluation of DARE in Illinois.* Center for Research in Law and Justice, University of Illinois at Chicago.
- Robins, L. N. & Przybeck, T. R. (1985). Age of onset of drug use as a factor in drug and other disorders. In C. L. Jones & R. J. Battles (Eds.), *Etiology of Drug Abuse: Implications for Prevention* (pp. 178-192) (Research Monograph No. 56, DHHS Publication No. ADM 85-1335). Rockville, MD: National Institute on Drug Abuse.
- Rosenbaum, D. P., Flewelling, R. L., Bailey, S. L., Ringwalt, C. L. & Wilkiason, D. L. (1994). "Cops in the Classroom: A



- Longitudinal Evaluation of Drug Abuse Resistance Education (DARE)." *Journal of Research in Crime and Delinquency*, 31: 3-31.
- Rosenbaum, D. P., & Hanson, G. S. (1998). Assessing the effects of school-based drug education: A six-year multilevel analysis of project D.A.R.E. *Journal of Research in Crime and Delinquency*, 35(4), 381-403.
- Rousseau, J.J. (1979). *Emile (1762)*. Translated by A. Bloom. New York: Basic Books.
- Rozani Rohani. (2003). *Penghayatan amalan solat fardhu: Satu kajian di kalangan pelajar Muslim di Kolej MAS, UUM*. Unpublished B.A. Thesis, Universiti Utara Malaysia.
- Schaps, E. J., Bartolo, R. D., Moskowitz, J., Palley, C. S. & Churgin, S. (1981). A review of 127 drug abuse prevention program evaluations. *Journal of Drug Issues*, 11, 17-43.
- Schinke, S. P. & Gilchrist, L. D. (1985). Preventing substance abuse with children and adolescents. *Journal of Consulting and Clinical Psychology*, 53, 596-602.
- Siegel, R. & Ehrlich, A. (1989). *Adolescence*, 24 (96), 925 - 936.
- Sells S. B. & Simpson, D. D. (1979). Evaluation of treatment outcome for youths in the Drug Abuse Reporting Program (DARP): A follow-up study. In G. M. Beschner & A. S. Friedman (Eds.), *Youth drug abuse: Problems, issues and treatment* (pp. 571-613). Lexington, MA: Lexington Books.
- Schaeffer, d. (1987). *Choices and consequences: What to do when a teenager uses drugs*. Minneapolis, MN: Johnson Institute.
- Skarie, E. K. (1988). Female adolescent individuation: Effect of maternal marital status, socio-economic status and family characteristics. *Dissertation Abstract International*, 40 (4-B), 1376
- Sharp, J. G. (1990). The relationship between adolescent substance abuse and family functioning. *Dissertation Abstracts International*, 50 (10-A). 3159
- Sherouse, D. (1985). *Adolescent drug and alcohol handbook*. Springfield, IL,: Charles C. Thomas.
- Shilts, L. G. (1989). Adolescent substance abuse and family dynamics. *Dissertation Abstract International*, 49 (8-B), 3142.
- Shoham, S.G., Rahav, G., Esformes, Y., Blau, J., Kaplinsky, N., Markovsky, R. & Wolf, B. (1974). Differential pattern of



- drug involvement among Israeli youth, *UNODC – Bulletin on Narcotics*, 4, 17-32.
- Shoham, S., Geva, N., Kliger, D. & T. Chai, (1974). "Drug Abuse among Israeli Youth: Epidemiological Pilot Study", *Bulletin on Narcotics*, XXVI: 2, 9-28, 1974.
- Silvia, E. S. & Thorne, J. (1997). *School-Based Drug Prevention Programs: A Longitudinal Study in Selected School Districts*. Research Triangle Park, NC: Research Triangle Institute (Prepared for U. S. Department of Education under contract LC9007001).
- South Carolina Department of Education and South Carolina Commission on Alcohol & Drug Abuse (1990). *Youth survey results regarding alcohol and other drug use in South Carolina during the 1989-90 school year*. Survey results for Charleston School District. Columbia, SC: Author.
- Stein, M. D. & Davis, J. K. (1982). *Therapies for adolescents*. San Francisco: Jossey-Bass.
- Steinglass, P. (1985). Family systems approaches to alcoholism. *Journal substance Abuse Treatment*, 2, 161 - 167.
- Stanton, M.D. & Todd, T. (1982). *The family therapy of drug abuse and addiction*. New York: The Guilford Press.
- Smart, L. S., Chibucos, T. R. & Didier, L. A. (1990). Adolescent substance use and perceived family functioning. *Journal of family Issues*, II (20 208 - 227).
- Swisher, J. D. (1979). Prevention issues. In R. L. Dupont, Goldstein, A. & O'Donnell, J. (Eds.), *Handbook on drug abuse* (pp. 423-435). Rockville, MD: National Institute on Drug Abuse.
- Swisher, J. D. & Hoffman, A. (1975). Information: The irrelevant variable in drug education. In Corder, B. W., Smith, R. A., & Swisher, J. D. (Eds.), *Drug abuse prevention: Perspectives and approaches for educators*. Dubuque, IA: Brown.
- Steinman, K. J. (2004). Religious activity and risk behavior among African American adolescents: concurrent and developmental effects. *American Journal of Community Psychology*, 35, 165-179.
- Strong, S. R., Wambach, C. A., Lopez, F. G. & Cooper, R. K. (1979). Motivational and equipping functions of interpretation in counseling. *Journal of Counseling Psychology*, 26, 98-107.
- Stylianou, S. (2004). The Role of Religiosity in the Opposition to Drug Use. *International Journal of Offender Therapy &*



- Comparative Criminology*, 48(4), 429-448.
- The Massachusetts Department of Public Health. (2002). *Risk and protective factors*. Retrieved February 15, 2005.
- Telch, M. J., Killen, J. D., McAlister, A. L., Perry, C. L. & Maccoby, N. (1982). Long-term follow-up of a pilot project on smoking prevention with adolescents. *Journal of Behavioral Medicine*, 5, 1-8.
- Tobler, N. (1986). Meta-Analysis of 143 adolescent drug prevention programs: Quantitative outcome results of program participants compared to a control or comparison group. *Journal of Drug Issues*, 16(4), 537-567.
- Trepper, T., Piercy, F., Lewis, R., Volk, R. & Sprenkle, D. (1993). Family therapy for adolescent alcohol abuse. In T. O'Farrel (Ed.). *Treating alcohol problems: Marital and Family interventions*. New York: Guilford Press.
- United Nations Division for Social Policy and Development (2007). Youth in civil society and their well being. United Nation of Economic and Social Affairs. <http://www.un.org/esa/socdev/index>.
- Underwood, L. G. & Teresi, J. A. (2002). The daily experience scale: Development, theoretical description, reliability, exploratory factor analysis, and preliminary construct validity using health related data. *Annals of Behavioral Medicine*, 24(1), 22-33.
- Victor, H.R., Grossman, J.C. & Eisenman, R. (1973). Openness to experience and marijuana use in high school students. *Journal of Consulting and Clinical Psychology*, 41(1), 78-85.
- Volk, R.J. (1990). Family systems and adolescent drug abuse. *Dissertation Abstract International*, 50, (11-A), 3764
- Walker, S. G. (1990). The Victoria Police Department Drug Abuse Resistance Education Programme (DARE) (Programme Evaluation Report 2). Victoria, British Columbia, CANADA: Author.
- Wallace, J. M., Bachman, J. G., & Laviest, T. A. (2003). The influence of race and religion on abstinence from alcohol, cigarettes and marijuana among adolescents. *Journal of Studies on Alcohol*, 64(6), 843-848.
- Wan Abdul Kader Wan Ahmad, & Sapora Sipon. (2003, May 11-13). *Penghayatan Agama dan hubungannya dengan stress*,



- burnout dan strategi berdaya tindak guru*. Paper presented at the PSIMA Annual Conference, Langkawi.
- Werner, E. E. (1989). High-risk children in young adulthood: A longitudinal study from birth to 32 years. *American Journal of Orthopsychiatry*, 59(1), 72-81.
- Werner, E. E. (1993). Risk and resilience in individuals with learning disabilities: Lessons learned from the Kauai longitudinal study. *Learning Disabilities Research and Practice*, 8(1), 28-34.
- Weiner, E.L. (1990). Bowen's concept of emotional connectedness to former spouse and family of origin as a moderator of health in a divorced population: A partial test of Bowen theory. (Unpublished doctoral dissertation. Kansas State University, Manhattan, KS)
- Wetchler, J., McCollum, E., Nelson, T., Trepper, T. & Lewis, R. (1993). Systemic couples therapy for alcohol-abusing women. In T. O'Farrell (Ed.). *Treating alcohol problems: Marital and family interventions*. New York: Guilford Press.
- Wibberley, C. & Price, J. (2000). Patterns of psycho-stimulant drug use amongst social/operational user: Implication for services, *Addiction Research and Theory*, 8, 95 - 111.
- Wills, T. A., Vaccaro, D., & McNamara, G. (1992). The roles of life events, family support, and competence in adolescent substance use: A test of vulnerability and protective factors. *American Journal of Community Psychology*, 20 (3) 349 - 369.
- Wigfield, A., Eccles, J. S., Yoon, K. S., & Harold, R. D. (1997). Change in children's competence beliefs and subjective task Values Across the elementary school years: A 3 year study. *Journal of Educational Psychology*, 89(3), 451-465.
- World Drug Report (2007). Vienna: UNODC.
- Wysong, F., Aniskiewicz, R. & Wright, R. (1994). "Truth in DARE." *Social Problems*, 41: 448-472.
- Wyvill, B., & Ives, R (2000). Finding out about young people's ideas on drug and drug use. *Drugs Education, Prevention and Policy*, 7, 127 – 137.

