

**Individual, Family and Social Environmental Factors Influencing
the Involvement of Adolescents in Substance Abuse**

Nor Azri Ahmad, Rozmi Ismail,
Fauziah Ibrahim, Salina Nen

National University of Malaysia

Author information: Nor Azri Ahmad, Ph.D, Director, Kota Tinggi Cure and Care Rehabilitation Center, 11070 Ladang Jaya Sri Perani, 81900 Kota Tinggi, Johor. Emel: azrinorazri@gmail.com

Rozmi Ismail, Ph.D, Associate Professor, School of Psychology and Human Development, Faculty of Social Sciences and Humanities, The National University of Malaysia, 43600 UKM Bangi, Selangor. Emel: rozmi@ukm.edu.my

Fauziah Ibrahim, Ph.D, Associate Professor, School of Psychology and Human Development, Faculty of Social Sciences and Humanities, The National University of Malaysia, 43600 UKM Bangi, Selangor. Emel: ifauziah@ukm.edu.my

Salina Nen, Ph.D, Senior Lecturer, School of Psychology and Human Development, Faculty of Social Sciences and Humanities, The National University of Malaysia, 43600 UKM Bangi, Selangor. Emel: sal_nen@ukm.edu.my

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Abstract

Substance abuse prevalence among adolescent has increased 9.25 percent a year in Malaysia. In relation to that the current research aimed to identify the extent of the relationships between individual factors (self-esteem, personal problems and coping skills); familial factors (parental supervision, family management, family attachment, family concerns and stressful of life events); and social environmental factors (risk environments in schools and communities; and protective environment in schools and communities) and the substance abuse behavior. This study employed cross-sectional quantitative study using stratified random sampling to select respondents (N=480) from the population of at risk adolescent at risk whom reported to be involved in substance abuse. Respondents aged were between 13-17 years and majorities are male. The results of the study shows that variables in socio-environmental factors (i.e. risk variables in school can explain 45.5 percent from the total variance in risk behavior of substance abuse as the dominant predictor. The results also show that the regression model of variables focusing on personal, family and social-environment is significant, which imply that these factors are the core causes of substance abuse and problem of recidivism among adolescent. Overall, the results give a clear picture that the socio-environmental factors are the most important element to be highlighted in designing intervention program and developing relevant module in substance abuse prevention. The implication of this study implies that socio-environment factors such as school and community engagement is important to be considered in any substance abuse program.

Keyword: Adolescent, substance abuse, risk behavior, socio-environmental factor, prevention program

Introduction

Substance abuse in early teens had been related to problems later in life (Gibbons et al., 2004; Wills et al., 2001; Windle, 1990). Substance abuse among adolescents is identified as a public health issue which should be given a significant importance and leads to problematic behavior and mental health problems (Layne-Landsman et al., 2010). One factor that is the most relevant that influences substance abuse is the age when they first start taking drugs at low doses. If the age is too young then the risk of being involved in substance abuse is higher. According to Valenzuela & Ferná'ndez (2011) the statement can be referred to the research carried out by Kandel (2002) about 30 years ago. Current development shows that substances which were considered as non illicit drug substances according to the law are now substance that can be abused and can open the doors to substance abuse such as marijuana, which in turn can lead to more severe addiction such as cocaine or heroin (Kandel 2002). The relationship between taking different substance is important in developing policies related to prevention and treatment.

Literature Review

The term at-risk adolescent is used in many ways including in the field of education and mental health, depending on risk factor types and syndrome or targeted problems (Merrell & Caldarella, 1999). Many define adolescents are risk-takers. Undeniably, if compared to individual in other age categories, adolescents is the age-group where they exhibit imbalance behavior such as negligent, thrill seekers and risk takers (Rosser et al., 2005; Spear, 2000; Trimpop et al., 1999; Walker, 2002, Azlina, 2010). Studies shows that the use of tobacco lead to the initiative of taking alcohol (Kandel & Yamaguchi 2002), and eventually leads to taking marijuana (Hawkins et al., 2002). Many studies have shown that at a younger age, if a person takes marijuana, especially in relation to frequent use, have a higher tendency to use hard drugs in the future (Kandel & Yamaguchi, 2002; Labouvie & White, 2002; Fergusson et al., 2006; Bretteville-Jensen et al., 2005). Other studies refers to the severity of substance use has association with cocaine and heroine (Kandel & Yamaguchi, 2002).

Studies on serious drug users shows that many severe cases do not follow any type of progression, there are individuals who started off from a lower-stage drug to the next higher-stage drug. Conversely, there are individuals who straightaway went on the higher-stage drugs (Golub & Johnson, 1994; Golub & Johnson, 2002; Mackesy-Amiti et al., 1997). Another study had shown substantial results of increased risk among adolescents (Fergusson et al. 2006). A documentation research by Lynskey on twins, found that genetic and enviromental influences can be controlled (Lynskey et al., 2003; Lynskey et al., 2006).

The focus of this research is on factors of substance behavior in relation to attitude and specifically factors that encourage substance abuse. Individual factors, including attitude and perception gives impact on the intention of behavior and influences behavior (Rivis et al., 2006; Warner et al., 2008). Thus, through this research, researchers are interested in evaluating the relationship between different individual characters, family and social environment factors and abuse of substance control know-how.

Adolescent is included in the study group to study the control know-how and potentials that could influence the onset of substance abuse. (for example, in Danseco et al., 1999; Gerrard et al., 2002). Children are still in the process of learning the dangers of substance abuse and harmful behaviors resulting from real experiences or the accepted norms, attitude and values shared among family members and friends (Akers & Lee, 1996; Andrews et al., 1993; Bahr et al., 2005). Identifying factors that could effects adolescents with abuse substance control

know-how can help in increasing the strategy in risk control know-how and reduce the probability of substance abuse.

The prevalence of substance abuse in Malaysia has remained as a national threat (AADK Yearly Report, 2014). This threat caused the government to declare that drugs as the number one enemy of the state since 1983. The never ending issues of drug motivated the government to establish the National Anti-Drug Agency (AADK) in 1996 to monitor and control the drug situation in Malaysia. The main objective of the establishment of AADK is to ensure the implementation of the country's policy in coordinating, controlling and monitoring and evaluating activities relating to the control and prevention drug problems and substance abuse.

This research significantly contributes to the gap existing in past researches, theories, concepts on behavior of substance abuse and the management of adolescents at risk. The result of this research will assist the relevant parties, particularly matters regarding adolescent especially for the AADK and other agencies managing adolescent at risk to understand and deal with these issues and devise a more effective action. The findings could also contribute to the relevant databases and provide a useful input for the development of adolescent, behavior risk prevention strategies of substance abuse which also involves the role of parents. Considering that, parents' knowledge of adolescent behavior had a direct relationship in reducing adolescent behavioral problems and substance abuse.

Research Objectives

Specifically the objectives of this study are to:

- i. describe the variables of individual factors (self-esteem, self-issues and coping skills), family factors (parental supervision, family management family attachment, family awareness and life pressure), social environmental factors (environment of risk (school, friends and community) and protected environment (school, friends and community) in relation to behavior risk of substance abuse.
- ii. identify the relationship between the variables in the individual factors (self-esteem, problem of self and coping skills), family factors (parental supervision, family management, family attachment, family awareness and life pressure) and social environmental factors (risk environments (school, friends and community) and protected environment (school, friends and community)) with behavior risk of substance abuse.
- iii. identify the most dominant determinant factors (individual, family, social environment and demographic characteristics of adolescents) on the risk behavior of substance abuse

Methodology

This study is a survey study that uses a quantitative approach to obtain information to achieving established objectives. The method uses a questionnaire survey to collect data on risk behaviors of adolescent of substance abuse.

The study population consisted of 2138 adolescents at risk as identified by the AADK across the country. The number of samples selected for this study is of 480 people. According to the

statistical agency in 2010, the total number of addicts identified is 23,642 people. Of the total number of addicts identified, a total of 25.9 per cent or 2,138 persons are adolescents aged between 13-18 years. The total adolescents population across 14 states in Malaysia are 2138. For the purpose of this study the population is clustered into four zones; North (Kedah and Pulau Pinang), East (Kelantan and Terengganu), Central (Selangor) and South (Johor). These states were chosen since according to statistics from NADI these are the states with the highest number of risk adolescents involving in substance abuse.

The sampling was done in two stages, namely 1) stratified random sampling and 2) systematic sampling. Stratified random sampling was used in which all the elements in the population was first separated according to the four zones namely North, East, Central and South. The states selected by the zone is Kedah and Penang (North Zone), Terengganu and Kelantan (East Zone), Selangor (Central Zone) and Johor (Southern Zone). The states were selected as primacy in reducing the rate of street crime, such as drug trafficking and drug addiction, snatch theft and so on. The second stage, the systematic random sampling was used to select respondents from the states involved.

The research instrument consists of a questionnaire that measures variables of the study. There are five sections in the questionnaire. Part 1, contains 12 questions related to the respondents' personal information. The questions are related to age, gender, race, number of family members, education level of parents / guardians, occupation of parents / guardian income, type of residence, area of residence and the custody status of respondents. The first part of the questionnaire was developed by researchers, reviewed and approved by the supervisor. Part 2 covers all the variables (independent and dependent) developed through the adaptation of previous studies and modified according to the needs of the current study.

A pilot study was conducted in a drug prevention education course program among school teens education program (SHIELDS program) in AADK, Melaka on 16 June 2012. The main aim is to assess the understanding of the items used in the questionnaire. At the same time to measure the reliability of the research instrument used. A total of 50 respondents participated in the study. Out of this pilot study, the reliability of each instrument had shown in Table 1 below:

Table 1: The reliability of the instrument (Cronbach alpha)

Factor	α
Self-esteem	.865
Problem of self	.904
Coping skills	.955
Parents' Surveillance	.731
Family Management	.744
Family Attachment	.720
Family Awareness	.912
Life Pressures	.886
School Risk	.873
Community Risk	.808
School Protective	.932
Community Protective	.863
Risk Behavior of Substance Abuse	.933

The reliability test in this study is to analyze the reliability of all the scales used. According to statistical methods, the closer the Cronbach Alpha is to 1, the higher the internal consistency. Table 3.5 below, shows the reliability of the instrument as dictated by Sekaran (2005) that was used as a guide in reading the instrument's reliability in this study.

Table 2: Cronbach alpha values according to Sekaran

Cronbach alpha value	Reliability
Less than 0.6	Weak
0.6-0.8	Acceptable
More than 0.8	Good

Source: Sekaran (2005)

According to Sekaran, Cronbach alpha value of more than 0.8 indicates that good reliability. While a Cronbach alpha value between 0.6 - 0.8 is an acceptable level. The instrument is considered to have a weak reliability when the alpha Cronbach value is below than 0.6. The level of reliability of the alpha Cronbach according to Sekaran is shown above. Based on this pilot study, the reliability of this instrument in general is acceptable and at a good level when the value of alpha Cronbach exceeds 0.8 as shown in Table 2.

Data Analysis

Descriptive statistic is used to describe the demographic characteristics (gender, age, race, residence, state, level of education of the respondents and parents, individual past experience, family income, parents' employment), family factor (parents surveillance, family management, family attachment, family awareness pressure, life pressure), social environment factor (involvement in school activities, risky activities at school, community, protective school environment, community and school peers) and behavior risk of substance abuse of adolescents at risk. The analysis includes the measurement of percentage, mean and variability. Pearson correlation inference statistics is used to identify the relationship between variables of factor of individuals (self-esteem; problem of self; coping skills), family factors (parents' surveillance, family attachment, family awareness and life pressures), social environmental factors (risk at school, risk in the community, school protective, community protective) and at behavior risk of substance abuse. Multiple regression analysis is used to identify the most dominant predicting factor on behavior risk of substance abuse.

Result Of Demographic Profiles

Respondents' demographic profiles provide a student's background information such as state of origin, age, gender, race, number of siblings, positions in the family and living condition which is shown in Table 3. In general, the number of respondents in this study is 480 persons who are from Pulau Pinang, Selangor, Kedah, Kelantan, Terengganu and Johor. Partially (40.2%) of the respondent are students age 17 years old. Followed by a group of students age 16 years old (35.5%) and students of the 15 years old (17.9%). While the rest of the respondents are students ages 14 and 13 years old.

The results of this studies showed in Table 3 implies that the majority of the respondents are male (90%) and Malay (95.2%). Partially (46.7%) of the respondents have between 1 to 4 siblings, while the rest (53.3%) have more than 5 siblings. The group of having 3 to 4 siblings has the highest number of respondents.

Table 3: Respondents' background demographic (n=480)

Variables	Number	Percentage
State:		
Pulau Pinang	110	22.9
Selangor	101	21.0
Kedah	72	15.0
Kelantan	67	14.0
Terengganu	67	14.0
Johor	63	13.1
Age:		
13 years old	4	0.8
14 years old	26	5.4
15 years old	86	17.9
16 years old	171	35.6
17 years old	193	40.2
Average = 16.09	Standard deviation = 0.931	
Gender:		
Male	432	90.0
Female	48	10.0
Race:		
Malay	457	95.2
Non-Malay	23	4.8
Number of siblings:		
1-2	48	10.0
3-4	176	36.7
5-6	142	29.6
≥7	114	23.8
Order in family:		
First child	100	20.8
Second child	110	22.9
Third child	96	20.0
Fourth child	67	14.0
Fifth child	27	5.6
≥Sixth child	80	16.7
Living conditions:		
Parents	401	83.5
Mother/Father/Guardian	79	16.5

From the aspect of position in the family, indicates that 20.8 percent are first child, while 16.7 percent are 5th child or higher. Majority of the respondents lives with their parents.

Result and Discussion

This section reports the results for the descriptive analysis. The scores of the variables are in the moderate range with the mean ranging between 2.34 to 3.669. According to Table 4 below, all the variables shows a score of 60.0% and above with only one variable (life pressure) scoring less than 60.0%.

Table 4: Respondents' background demographic (n=480)

Variable	Level (%)	Mean	S.D
Self-esteem	Moderate (67.1)	3.44	.345
Problem of self	Moderate (70.0)	2.65	.298
Coping skills	Moderate (71.7)	3.66	.683
Parents' Surveillance	Moderate (73.5)	3.64	.742
Family Management	Moderate (63.4)	3.47	.659
Family Attachment	Moderate (67.5)	3.61	.708
Family Awareness	Moderate (70.0)	3.65	.799
Life Pressures	Moderate (59.4)	2.16	1.056
School Risk	Moderate (60.0)	1.96	1.032
Community Risk	Moderate (66.0)	2.26	.957
School Protective	Moderate (66.7)	3.63	.969
Community Protective	Moderate (72.5)	3.31	.848

This section reports the descriptive analysis which includes the percentage of variables related to behavior risk of substance abuse. A total of eight (8) substances are shortlisted for the purpose of measuring the variables related to behavior risk of substance abuse. The eight items are summarized in the Pennsylvania Youth Survey (PAYS) by Cleveland et al. (2008) and Youth Risk Behavior Surveillance (YRBSQ) by Eaton et al. (2010). Percentages were based on the substance abuse shown in Table 5.

Table 5: Percentage of behavior conducts of substance abuse (n=480)

Type of substance abuse	Percentage (%)	
	Yes	Never
Smoking/tobacco related	80.0	20.0
Amphetamine	34.8	65.2
Drink Alcohol (including ketum)	34.8	65.2
Methamphetamine (Ice/Syabu)	29.6	70.4
Smoking/inhaling Marijuana	28.5	71.5
Inhaling glue/inhalant/thinner	25.8	74.2
Ecstasy (MDMA)	25.0	75.0
Heroin	24.8	75.2

The result shows that the majority (80.0%) of the respondent reports of smoking / using tobacco related products. Another type of abuse with a higher percentage is Amphetamine (34.8%) and alcohol abuse (34.8%). For other types of substance abuse, analysis shows that more than one quarter of the respondents abuse them. According to the overall percentages of the listed substance abuse, activities of substance abuse among the respondents is highly and disturbing.

In order to clarify the behavioral conduct of substance abuse, several through analysis were carried out. Behavioral conducts in substance abuse according to states are analyzed. Research shows that in general, there are 16.9 percent of the respondents who are not involved in any of the listed substance abuse. While 35.0 percent are involved in at least one (1) substance abuse conduct and as many as 16.9 percent are involved in all eight (8) substance abuse.

RELATIONSHIP BETWEEN FACTORS AND SUBSTANCE ABUSE BEHAVIOR

Pearson Correlation is a statistical test used to determine if there is a relationship between independent variables with risky behavioral conduct of substance abuse. The correlation value is then compared to the Relationship Strength Table based on Sekaran (2005). The result of the analysis is as presented in Table 6.

Table 6: Relationship between factor and risky behavioral conduct of substance abuse

Variable	r	ρ
Self-esteem	-.144**	.002
Problem of self	.365**	.000
Coping skills	-.158**	.001
Parents' Surveillance	-.127**	.005
Family Management	-.158**	.001
Family Attachment	-.346**	.000
Family Awareness	-.207**	.000
Life Pressures	.495**	.000
School Risk	.675**	.000
Community Risk	.649**	.000
School Protective	-.199**	.000
Community Protective	-.046	.315

Pearson Correlation analysis has uncovered several interesting findings. Table 6 presents two main findings of the analysis. The first finding is the School Risk variable ($r=.675$; $\rho=0.000$) and Community Risk variable ($r=.649$; $\rho=0.000$) have a positive significant relation and at a moderate level with risky behavioral conduct. However, Community Protective is the only variable that does not show a significant relation with a level of .05.

Other variables such as self-esteem, problem of self, coping skills, parents' surveillance, family management, family attachment, family awareness, life pressure and school protective shows positive significance and are at low levels between substance abuse behavioral conduct.

Identifying the Most Dominant Prediction Factor of Substance Abuse Behavior

This section tests the most dominant factor of substance abuse behavior. In order to test which factor influences substance abuse behavior, which is a dependent variable, advance multiple regression was carried out. The regression test used the stepwise method on the research independent variable that was found earlier to have significant link to behavior risk of substance abuse based on the Pearson correlation result analysis done earlier. There are eleven (11) independent research variables which are found to have significant link to behavior risk of substance abuse which are used in the regression analysis. The variables are self-esteem, problem of self, coping skills, parents' surveillance, family management, family attachment, family awareness, life pressure, school risk, community risk, and school protective. Table 7 shows the basic model of regression which have been concluded to show which factor uniquely contributes to behavior risk of substance abuse.

Table 7 Regression model on behavior risk of substance abuse

Model: $Y = a + b_1X_1 + b_2X_2 + b_3X_3 + \dots + b_{11}X_{11} + \epsilon$		
where,	Y	= Behavior risk
	X ₁	= Self-esteem
	X ₂	= Problem of self
	X ₃	= Coping skills
	X ₄	= Parents' surveillance
	X ₅	= Family management
	X ₆	= Family attachment
	X ₇	= Family awareness
	X ₈	= Life pressure
	X ₉	= School risk
	X ₁₀	= Community risk
	X ₁₁	= School guardian
	a	= Constant
b ₁ , b ₂ , b ₃ , ... b ₁₁		= Regression coefficient values
	ε	= Error

The regression analysis result on behavior risk of substance abuse is shown in Table 8 where four (4) out of eleven (11) independent variables are the main predictors to behavior risk of substance abuse.

According to the obtained statistical information, the school risk variable contributes to 45.5 percent from the variance of behavior risk of substance abuse of the studied respondents. This shows that school risk is the most dominant predictor of behavior risk of substance abuse. Other variables that could explain the variance in behavior risk of substance abuse are community risk (3.7%), school guardian (3.0%) and problem of self (0.09%).

Table 8: Predictor of substance abuse behavior

Predictor Variables	B	Beta	T	sig-t	R ²	ΔR ²
(Constant)	-2.873		-2.619	.001		
School risk (X ₉)	1.034	.370	7.147	.000	.455	
Community risk (X ₁₀)	.995	.331	6.458	.000	.492	.037
School protective (X ₁₁)	-.389	-.131	-3.775	.000	.522	.030
Problem of self (X ₂)	1.065	.110	3.038	.011	.531	.009

F = 134.313 Sig-F = .000

However, if the four variables are combined statistically, another model is formed which could describe the 53.1 percent variance in behavior risk of substance abuse incidents. The developed model is significant (F=134.313, Sig-F =.000). The result also shows that 46.9 percent of the behavior risk of substance abuse variance cannot be described by the studied predictor variables. Therefore, it is suggested that there are other factors which influences the behavior risk of substance abuse among the respondents. The multiple linear regression equation can be summarised as follows;

Behavior risk in substance abuse = $-2.873 + (1.034)_{\text{School risk}} + (0.995)_{\text{Community risk}} + (-.389)_{\text{School protective}} + (1.065)_{\text{Problem of self}}$

Overall, the multiple regression analysis have given a clear picture that the social environment factor is the most important to control in avoiding adolescents from getting involved in behavior risk of substance abuse. This is proven through the results when three variables are combined in this significant factor as behavior risk of substance abuse predictor, which are school risk, community risk and school guardian. It manages to describe the 52.2 percent variance in incidents of behavior risk of substance abuse among studied respondents.

The second important factor in influencing the behavior risk of substance abuse is individual factor. The significant factor of an individual as a predictor of behavior risk of substance abuse is problem of self. This describes 0.9 percent variance in incidents of behavior risk of substance abuse among the studies respondents.

The result of this study clearly shows that social environment factor is dominant in influencing the behavior risk of substance abuse among adolescents. This result is supported by a study done by Turner et al. (2009) who showed that school factor plays an important role in molding the behavior of adolescents. In this situation, the school plays a major role especially the school counselor who should always be aware with any changes in behavior or environment of adolescents.

Discussion

The result of the study clearly shows that easy access to substances or drugs is the major factor which contributes to the risky behavior of substance abuse among adolescents compare to other risk factors. This statement is supported by results of Hogan et al. (2003), Hayes et al. (2004) and Hollen (2009) who have stated that the convenience of obtaining a substance or drugs in the community where the adolescent resides increases the risk of substance abuse among adolescents. In addition, failing to identify the type of drug may also become another risk factor of substance abuse. This happens due to friends introducing them to illegal substances without realizing that it can harm them. In schools where the adolescents think it is the only place to get access to these illicit substances, will have the highest rate of abuse. For example, there exist in a community where adolescents think that drugs are highly accessible, and since they do not recognize the types of drugs, it becomes a risk factor to the adolescent and is supported by the social norm that drugs are easily attain and are harmless.

The age of the respondents involved in this study are between 13 to 17 years old. The substance abuse behavior analysis result according to age, in general, shows a trend of increasing percentage of substance abuse for all of the studied items with the increase of age. The older the age group of the respondents the more they are involved in substance abuse. This corresponds to a research done by Kandel & Yamaguchi (2002) which shows that drugs used at a younger age are light drugs and as they get older the complexity of the drugs increases.

The involvement of adolescents in substance abuse problem as addressed by in the Drug Report 2010 by the AADK, shows teen addicts between the age of 13-18 years old have increased in 2009 compared to 2008 by as many as 332 cases. A striking increase happened as in the following year the number increased to 2138 cases of adolescents involed in drug abuse or 9.25 percent from the total of 23, 642 (Drug Report, AADK 2011). This prevalence

shows a high percentage of adolescents' involvement. They have the potential to be influenced and recruited to become a drug addict if there are no early preventive action taken. The involvement in substance abuse is said to be higher especially among adolescents who are still in school.

Therefore, the behavior of substance abuse cannot be taken lightly anymore as the current situation shows that adolescents are easily expose to the risk of substance abuse. Among the reasons, are that they are easily approachable and at this age they are also easily influenced by their social sphere such as school, peers, family and other social environment. In addition, adolescents make up the the highest population in this country which is approximtely 68.1 percent from the total population of 28.25 million people (Department of Statistic Malaysia, 2010). The drug report from AADK shows that most of the addicts in Malaysia were introduced to drugs between the age of 13-15 years old and 17 percent are new addicts are young adults between the age of 19-39 years old. The research of Wright & Davis (2001) in the United States finds that students report that the first time they used an illicit substance was between 12 and 14 years old.

Past research shows that there is a correlation between age and problematic behavior (YRBSS 2010; Jenkins 1995; Rafidah 2007). Early teens (age 12-16 years old) is the time of significant development of risk transition to use and abuse of substance (Flight 2007; Schulenberg et al., 2004; Schulenberg et al., 1996; Schulenberg et al., 2005). According to Mohd Muzafar Shah (2007), the onset age of problematic behaviour is the main risk factor of substance abuse in adolescents. Substance abuse at an early age is found to be a predictor of substance abuse at a later age (Armstrong & Costello 2002; Wills et al., 2001). Mahmood Nazar Mohamed et al. (2008) has carried out a research on substance abuse among adolescents in the northern region (Kedah, Perlis & Pulau Pinang) by taking samples of students in Form Two, Four and Six from six different schools (governement, private and People's Religious School (SAR)) and found a signification relationship between age and substance and illicit drug abuse. His research found that the older the respondents the more involved they are in substance abuse. However, the correlation is small. The result of the research also collaborates with the research of Kilpatrick et. al., (2000) on adolescents between the age of 12 and 17 years old which shows that with the increase age of the adolescents, abuse and dependency on substance such as drugs and alcohol are closely related.

This situation is also supported by Krank et al. (2011) who characterized that most adolescents at this age are open to trying anything new especially when it is related to illicit substance due to peer invitation or to experience for themselves substances such as alcohol, tobacco and drugs since they were hyped by their peers. Although, in the early secondary school a few adolescents are involved in drugs, it quickly escalates to the use of alcohol, tobacco, marijuana and hallucinogens through out the following years. Subsequently, the pattern of substance abuse may have started at an early age and the early initiative of an early start means that this is a risk factor for the problem of substance abuse in the future.

According to Neimeimer (2005) and Frazier et al. (2000) tobacco and alcohol abuse at an early age could lead to severe abuse of tobacco and alcohol and increase the risk of abuse of marijuana and other drugs. Mohd Muzafar Shah (2007) also stated that eventhough not all smokers will turn to be drug addicts, research shows that all drug addicts are smokers.

In this research, the studied social environment involves the risk and protective factors of school and community. The definition operations for this research are risk factor which refers to surrounding factors including school and community which could influence substance abuse behavior among adolescents. Risky factors are defined as something that could encourage or trigger negative behavior resulting from a situation which is happening around their environment. While the definition operations of protective factor, refers to factors surrounding the school and community environment which could obstruct the substance abuse behaviour among adolescents. Security aspect and other elements which could give sense of safety among the respondents are also identified for both factors.

The results clearly shows that external factors (social environment) are more important than internal factors (individual and family). This is supported by the research done by Turner (2009) which shows that school factor plays an important role in moulding the behavior of adolescents. The influence among peers and the accessibility to substances as recorded in this research where adolescents who lives near to the border such as Kelantan, Terengganu, Kedah and Pulau Pinang are easily expose to the dangers of substance abuse. The easy access to these illicit substance is the strongest inducement to the substance abuse problem among adolescents in addition to the associations with peers who have experience in using these illicit substances.

In this situation, the school has to play a huge role especially the school counselors who should be on his toes to any surrounding or behavior change of schooling adolescents. Since research shows that surrounding factor is the main contributor to substance abuse among adolescents. Parallel to the efforts in curbing this problem, the school and education department through the drug prevention education unit in the state, district and school level must be utilized fully to structure the prevention intervention for the adolescents in question and to those who have been identified as having the potential risk in being involved in substance abuse.

Prevention intervention module developed must include the school and local community surrounding factor since the results of this research have proven that surrounding school and community elements are the main contributor to substance abuse behavior problem of adolescents. It is also supported by the longitudinal research by National Institute of Drug Abuse (NIDA). Through their research NIDA have outlined 16 prevention principles which must be followed by those who are developing prevention intervention program. In 1997, NIDA has published its first edition of the guideline to drug use prevention among children and adolescents base on research for parents, teachers and community leaders. This guideline introduced the concept of 'research-based prevention' with question and answer such as risk and guardian factors, planning and execution on the community, and until 2003 NIDA has produce 16 prevention principles as a result of years of research regarding the effectiveness of drug abuse prevention.

In brief, the guideline for the execution of the prevention program module of the AADK should consider these 16 prevention principles as follows;

	Risk and Protective Factors
Principle 1	Prevention program should increase the protective factors and decrease the risky factors (Hawkins et al., 2002), (Wills et al., 1996), (Gerstein & Green 1993; Kumpfer et al., 1998), (Ialongo et al., 2001) and (Beauvais et al., 1996; Moon et al., 1999).
Principle 2	Intervention program must include all type of drug, whether as a single compound or a combination, including underage drug abuser (Johnston et al., 2002).
Principle 3	Prevention program should be according to the abused drug in the local community, risky target group and guardian factor identification reinforcement (Hawkins et al., 2002).
Principle 4	Prevention program should be developed based on specific risk of a population or the characteristic of the receiver such as age, gender, and ethnicity to enhance the effectiveness of the program (Oetting et al., 1997).
	Prevention Planning
	a) Family Program
Principle 5	Family based prevention programs should encourage family ties and relationships. (Ashery et al., 1998), (Kostermann et al., 1997, 2001), (Bauman et al., 2001) and (Spath et al., 2002b).
	b) School Programs
Principle 6	Prevention program can be structured for early intervention at the pre-school level (Webster-Stratton 1998; Webster-Stratton et al., 2001).
Principle 7	Prevention program at primary school level must put a target to increase the academic level of the children and social-emotion education (Ialongo et al., 2001).
Principle 8	Prevention programs for lower and upper secondary students should increase the academic and social competency (Botvin et al., 1995; Scheier et al., 1999).
	c) Programs in the Community
Principle 9	Prevention program targets the general public as the onset to the transition from programs at the school level (Botvin et al., 1995; Dishion et al., 2002)
Principle 10	Community prevention programs, which combines two or more effective programs, such as family based program and school-based programs. (Battistich et al., 1997).
Principle 11	Community prevention programs could reach all population levels in various setting. (Chou et al., 1998).
	Prevention Program Delivery
Principle 12	Easy assess programs suitable to needs, community norm or culture differences should maintain real fundamentals that refer to the interventions based on research (Spath et al., 2002b).

Principle 13	Prevention programs should be long-term and continuous prevention (Scheier et al, 1999).
Principle 14	Prevention program should include training for teachers (Ialongo et al., 2001).
Principle 15	Prevention programs with interactive techniques are more effective such peer discussion group, family role-play, active involvement in learning about drug abuse and skill enforcement (Botvin et al., 1995).
Principle 16	Prevention program based on research can be cost effective but accurate (Pentz 1998; Hawkins et al., 1999; Aos et al., 2001; Spoth 2002a)

Source NIDA (2003): Preventing drug use among Children and adolescents: A research –based guide for parents, educators, and community leader.

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