


ORIGINAL ARTICLE

Risk and Protective Factors in Predicting Drug and Substance Abuse Among Malaysian Youths

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Main Points

- Factors increasing the risk of drug abuse include age, negative influence, and antisocial behavior.
- Protective factors against drug abuse include marital status, positive attitude, and high social support from family and friends.
- Among youth, sourcing drugs from friends was identified as a major risk factor for drug abuse while a positive attitude was a major protective factor against drug abuse.
- The marital status factor is one of the protective factors against drug use which contrast with the previous finding reported by Umukoro et al. (2006) in the United States.

Abstract

Young people are the next generation and the hope of a country. Nevertheless, they are not spared from becoming trapped by drug abuse. In Malaysia, there was an increasing number of drug abuse reported among youths. The factors of drug involvement among youths are complex. Hence, this study was aimed at identifying the risk and protective factors of youth involvement in drug abuse in Malaysia.

A cross-sectional study involving a national survey was conducted among 9818 respondents aged 15 – 40 years. Respondents were selected from all 14 states in Malaysia via stratified and systematic sampling. The inclusion criteria were Malaysian, age 15 – 40 years, at least 3 months of residence at the location, parental consent for those aged <18 years, no serious physical and mental illness, and ability to read and write in Malay. The questionnaires used were the Alcohol, Smoking and Substance Involvement Screening Test; Depression Anxiety Stress Scale-21; Religious Commitment Inventory-10; Multidimensional Scale of Perceived Social Support; Misconduct Involvement Frequency Scale; and the Knowledge, Attitude, and Belief Test. The primary data were collected through a set of questionnaires which consisted of eight sections (sections A – I) via face-to-face interviews. The data collected were then analyzed using the Statistical Package for the Social Sciences 26 and STATA 22. The risk and protective factors of involvement in drug abuse were determined with multiple logistic regression analysis.

The results showed that sourcing drugs from friends was a major risk factor for youth engagement in drug abuse while a positive attitude was a major protective factor against drug abuse among youths. Other than that, the increasing tendency of drug abuse among subjects was found to be related with age, negative influence, and antisocial behavior while a positive attitude and high moral support from family and friends were found as protective factors against drug abuse. These findings imply that stakeholders should focus on

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individual factors such as the influence of friends and simple drug resources in intervention planning activities and youth programs toward producing a drug-free generation.

Keywords: Adolescence, drug abuse, Malaysia, protective factors, risk factors

Introduction

Drug and substance abuse among the youth is a substantial public health issue throughout the world (Azmawati et al, 2021; World Drug Report, 2018). Recently, United Nations Office on Drugs and Crime (Canton, 2021) has reported that drug abuse worldwide has increased by 11.0%, in line with the increase of the total world population by 2030 (299 million people). According to the World Drug Report, an estimated 13.8 million people aged 15 – 16 years have used cannabis, with a prevalence rate of 5.6% (World Drug Report, 2018). The ages of 12 – 14 and 15 – 17 years are a highly critical period for the onset of drug abuse, especially psychoactive drugs, with high trends among adolescents aged 18 – 26 years (Stone, 2012; World Drug Report, 2018).

Youth is the most transitional period in one's life dealing with sudden physiological and psychosocial changes. The changes may involve various unhealthy lifestyles and behaviors (e.g., smoking, alcohol consumption, illegal drug use) (Ajzen & Manstead, 2007). Substance abuse is the hazardous or harmful use of psychoactive substances (e.g., tobacco, alcohol, illicit drugs) (Ajzen & Manstead, 2007; World Health Organization [WHO], 2010). The first onset of substance abuse is usually reported during adolescence (Tripathi & Lal, 1999); more than 90% of addicted people with substance abuse behavior are introduced to substances before starting their adulthood (Moonajilin et al., 2021).

In Malaysia, the 2019 statistics from the National Anti-Drug Agency (AADK) showed that 142,199 people were involved in drug abuse, an increase of 8.7% compared to 2018. According to the AADK, the number of drug abusers over a decade (2008 – 2018) had increased by more than 10-fold to 230,209 people and included new and recurring cases (Agensi Antidadah Kebangsaan (AADK), 2020). If calculated from 1988 to 2018 (within 20 years), there are an estimated 495,000 registered addicts in total. Most drug addicts identified in 2008 – 2018 were young people aged between 19 and 39 years. Razali and Kliever (2015) found that one in six adolescents and one in three early adults used drugs for entertainment and recreation, including amphetamine-type stimulants/methamphetamine. This percentage is very worrying because young people are the next generation who will lead the country in the future.

A variety of factors and reasons drive youth involvement in drug abuse. Nevertheless, there is not much work on the causality of youth drug use either in Malaysia or abroad. Existing research focuses more on certain factors, such as the self and environment. There are previous studies focused on the factors motivating youths to use drugs, such as curiosity, the influence of friends, and seeking pleasure (Chie et al., 2015; Desrosiers et al., 2016; Parada et al., 2015). This is because, biologically, youths undergo a growth process in terms of self-exploration, trying new things, and adapting to current environmental conditions. This condition is a major cause and contributor to drug abuse among youths.

Nonetheless, over time, there is a great need for research on the most recent causes and driving factors of drug abuse. Likewise, from a theoretical perspective, not many theories can be referenced to explain the factors that contribute to an individual's involvement in drug use. One theory is the Problem Behavior Theory (PBT) (Jessor & Jessor, 1977). The PBT can explain problematic behavior, especially among young people in Malaysia. In the present study, problematic behavior in drug abuse refers to incorrect drug use and not for medical purposes, that is, only to derive pleasure or to eliminate mental confusion. Drug-taking behavior is closely related to individual sociodemographic background factors, socialization, and the environment (National Institute on Drug Abuse, 2008).

Apart from that, sociopolitical changes, the environment, financial problems, family problems, peer influence, and mental health issues lead to individuals becoming motivated to abuse drugs as a solution to such problems (Causadias, 2013; Jasni, 2018; Mallow, 2019; Parada et al., 2015). The period of rapid individual development, especially from early to late youth, is very critical and needs to be managed as best as possible to reduce involvement in activities contrary to social norms, such as drug abuse (Samet, 2003). This is because youths prefer to imitate, be curious, and follow along to try something new (Ahmad, 2002). In addition, Becker and Hu (2008) showed that gender factors influence drug abuse, especially for adolescent boys, who are at higher risk compared to girls. Buccelli (2016) showed that men are 2 – 3 times more likely to abuse drugs than women. Nevertheless, others have reported that many women use drugs because they want to avoid or escape their problems (Chie et al., 2015; Mahmood, 2005; Othman et al., 2015).

Readily available drugs contribute to drug abuse (Kulsudjarit, 2004). The sources of drug purchase or supply include friends, distributors (tokens), family members, employers, and close partners such as boyfriends, lovers, or husbands. According to Marican et al. (2007), peers are the main drug supply source, encouraging the respondents to engage in drug abuse. By contrast, Othman et al. (2015) reported that syndicates or drug dealers pose a threat to the involvement of minors in drug abuse. Apart from the above, participation in antisocial behaviors contrary to social norms (i.e., crimes) and mental health problems are also contributing factors to drug use (Borowsky, 2001; Othman et al., 2015). This is supported by the studies of Grant et al. (2004) and Claro et al. (2015), who found that people with mental health problems commonly use drugs, or that most drug users have mental health problems.

From another perspective, some factors can be preventive or protective factors for individuals with problematic behaviors (Neighbors et al., 2013; Rapier, 2019). Perez et al. (2016) and Zaidi (2020) have reported that the protective factors include social support from family members and close acquaintances, which is also associated with forms of care and loving treatment during

childhood. Alexander et al. (2018) found that a lack of family love, physical abuse, and marital relationship problems contributed to adolescent drug abuse. In addition, correct attitudes and knowledge about potentially addictive harmful substances can be protective factors. This is because knowledge can provide information on the disadvantages and harms of drug use. Nonetheless, even though people are aware of the dangers of drug use, they still abuse drugs (Abudu, 2008). This is because they have only general knowledge about drugs but no specific knowledge about the chemical constituents in a substance.

Based on the earlier studies, we may conclude that the factors influencing drug abuse are complex. In fact, many factors can contribute to drug abuse, such as individual background factors, risk factors, and protective factors. Therefore, the present study will examine the abovementioned factors so that stakeholders may use the findings to provide a framework for planning interventions and monitoring youth who use drugs.

Methods

Study Location, Population, and Sampling

The study population was youths aged 15 – 40 years in all 14 states in Malaysia. Samples were identified through a sampling framework based on an updated list of enumeration blocks (EB) and living quarters (LQ). The EB and LQ information was based on 2019 Population and Housing Census estimates from the Department of Statistics Malaysia. Samples were selected by the Department of Statistics Malaysia according to EB level by probability proportionate to size, where the total number of samples observed was based on the population size of the district for each state in Malaysia. The inclusion criteria were Malaysian, age 15 – 40 years, at least 3 months of residence at the location, parental consent for those aged <18 years, no serious physical and mental illness, and ability to read and write in Malay.

The EB for each Malaysian state was selected using stratified sampling according to the total population. Next, LQ samples were selected using systematic sampling by generating a random start and obtaining interval selection (interval = 3) so that each LQ had the same probability of being selected as a sample.

Ethics Approval and Informed Consent

This study was approved by the Ethics Committee of the Secretariat of Research Ethics, Universiti Kebangsaan Malaysia, Faculty of Medicine, Cheras, Kuala Lumpur (Reference no. UKMPP I/111 /8/JE P-202 0-583). Informed consent was obtained from all participants and parental consent was obtained for those aged <18 years.

Sample Size

The sample size calculation was based on a drug abuse prevalence of 5% according to the 2019 report of the National Health Morbidity Survey (NHMS, 2019). Based on this finding, the precision rate was established at 5% and the sample size to be obtained was 20,839. However, due to constraints imposed by human resources, time, cost, and the coronavirus disease 2019 pandemic, the precision rate was increased to 7%. Therefore, the sample size was reduced to 10,640 from the total youth population (age 15 – 40 years) in Malaysia. However, during the data purification, a total of 822 (7.7%) was issued, which were the replacement respondents outside the EB list, resulting in the

number of respondents being 9818. This number did not affect the number of samples required because the above sample calculations had considered a dropout rate of 20%.

Study Instruments

We collected primary data through a set of questionnaires via face-to-face interviews. The questionnaires consisted of eight sections (sections A – I). Section A involved information on the respondent's demographic. Section B involved information on drug and substance use. Section C referred to drug sources while Section D was related to drug and substance abuse screening using the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST). The ASSIST measures the frequency of substance and drug intake by type. It was drafted and developed by a group of international researchers for the WHO, which aimed to track and control the symptoms of substance and drug use (Ali et al., 2013). The ASSIST is aimed at identifying problems related to substance and drug use in the last 30 days more quickly and effectively. The materials included in the instrument are cigarettes, alcohol, marijuana, stimulants, sedatives, opiate drugs, and other substances stated by the respondents. Scoring for the short-version ASSIST (ASSIST-Lite) is either "Yes" or "No"

Section E used the Malay version of the Depression Anxiety Stress Scale-21 questionnaire (Musa et al., 2007). The tool is used for measuring mental health and consists of aspects of depression, anxiety, and stress. Each aspect has seven items. Each item is scored 0 – 4, representing never, rarely, always, often, and most of the time. Section F was for identifying religious commitment and used the Religious Commitment Inventory-10, which is used for measuring religious commitment related to protective factors against drug abuse. The questions on religion consisted of 10 items. Each item is assigned a score of 1 – 5, representing strongly disagree, disagree, neutral agree, and strongly agree. Each respondent's score ranged 10 – 50. A higher total score indicates a higher level of religiousness (Worthington, 2003).

Section G involved information on negative and antisocial influences using the Misconduct Involvement Frequency Scale. The tool involved respondent misconduct such as offenses of threatening, injuring, involvement in drugs, stealing, and robbery. There are 13 dimensional items for antisocial behavior (Dembo, 2005; Dembo & Schmeidler, 2003; Elliott, 1985; Huizinga, 1991; Huizinga & Esbensen 1988). All items are negative, so scores are assigned directly where the most marked frequencies will be summed. In this manner, the researcher will examine the most or less frequent acts of misconduct committed by the respondent.

Section H involved the respondents' knowledge and attitudes toward illicit and used the Knowledge, Attitude, and Belief (KAB) measurement tool (Bryan, 2000). This instrument has been used in previous studies that measured drug knowledge levels (Al-Zurfi et al., 2016; Mousavi Hondori & Khademi, 2014). The items in this tool use a category format with a Likert scale but with more point values, that is, 7 points starting from point 1 (strongly disagree) to point 7 (strongly agree), and have been developed for each theme. A higher total score indicates a higher level of KAB regarding drugs.

Section I was related to information on social relationships with immediate family members, family, and friends and used the

Multidimensional Scale of Perceived Social Support. Each social support had four items and was measured with a score of 1 – 7, representing strongly disagree, disagree, slightly disagree, neutral, slightly agree, agree, and strongly agree. A higher total score indicates a higher level of support from immediate family members, family, and friends. All research instruments used in this study have high reliability, with Cronbach alpha values of .707 – .933.

Data Analysis

The data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 26 (IBM SPSS Corp.; Armonk, NY, USA) and STATA 22. Table 1 shows the list of independent variables used in this study. In SPSS, descriptive analyses were performed to describe the respondents’ characteristics in terms of frequencies, percentages, and mean and standard deviation. In STATA, logit model analysis was used. Logit analysis was selected because it enables the use of a dichotomous dependent variable. The dependent variable in this study is dichotomous and measures whether youths abuse drugs (it takes a value of 1 if the answer is “taken one type of drug” and 0 if “other”). We also used logit analysis to estimate a relationship between a set of variables describing an entity and the probability that the entity will be in a given final state. In addition, logit analysis was used for estimating which ratio was accurate, the drug abuse ratio prediction, and which ratio was the most influential factor of drug abuse.

The odds ratio refers to the ratio of the probability of an event occurring to the probability of that event not occurring. If the predicted probability is >.50, then the event will occur.

Results

Demographic Characteristics and Other Related Variables

Table 2 shows the respondents’ demographic information: 55.7% of the respondents were male and 44.3% were female. Regarding marital status, 43.3% of respondents were married while 56.7% were single/widowed. The proportion of respondents aged 31 – 40 years was the highest (36.6%), 27.8% of the respondents were aged 25 – 30 years, and 25.9% were aged 19 – 24 years. The remaining 9.8% of respondents were aged 15 – 18 years.

The mean negative influences score was 8.59, indicating that the respondents agreed with the feeling of wanting to try something new, to have fun, to relieve stress, as a stimulant, to relieve pain, and unconsciousness or ignorance. The mean social behavior score was 14.78, indicating that the respondents engaged in regular and frequent antisocial behavior such as stealing, gang fights, hitting, breaking into buildings or vehicles, using sharp weapons, cheating on home runs, engaging in self-harm, having sex outside of marriage, selling drugs or becoming drug dealers, and staying awake or hanging out all night. Respondents were categorized as normal when they had depression, anxiety, and stress scores of

Table 1.
List of Independent Variable

Variable	Type of Variable	Description of Variable
Demographic		
Age	Dummy	Respondent’s age (15 – 18 years, 19 – 24 years, 25 – 30 years, and 31 – 40 years)
Gender	Dummy	Gender (1 = male, 0 = female)
Marriage statue	Dummy	Marriage status (1 = single, 0 = married)
Biology factor		
Negative influence	Continuous	Respondent’s negative influence
Antisocial behavior	Continuous	Respondent’s antisocial behavior
Drug source		
Friend	Dummy	Drug source (1 = friend, 0 = not source)
Neighbor	Dummy	Drug source (1 = neighbor, 0 = not source)
Family member	Dummy	Drug source (1 = family member, 0 = not source)
Mental health		
Depression	Dummy	Respondent’s depression (1 = yes, 0 = no)
Stress	Dummy	Respondent’s stress (1 = yes, 0 = no)
Anxiety	Dummy	Respondent’s anxiety (1 = yes, 0 = no)
Protective/control factors		
Religion	Continuous	Respondent’s religious level from intrapersonal and interpersonal aspect
Knowledge about drugs	Continuous	Knowledge level of respondents about drugs
Attitude toward drugs	Continuous	Respondent’s attitude toward drugs
Social support		
Close family members	Continuous	Level of support received from close family members
Family	Continuous	Level of support received from family
Friend	Continuous	Level of support received from friends

Table 2.
Respondent's Characteristics

Information	Frequency (n)	Percentage (%)
Gender		
Male	5464	55.7
Female	4354	44.3
Marital status		
Single/widow/widower	5566	56.7
Married	4252	43.3
Age		
Mean	28.18*	7.269*
15 – 18 years old	959	9.8
19 – 24 years old	2541	25.9
25 – 30 years old	2729	27.8
31 – 40 years old	3589	36.6
Negative influences*	8.59	5.4
Antisocial behavior*	14.78	4.7
Depression		
Non-normal (0 – 9)	2642	26.9
Normal (>10)	7176	73.1
Anxiety		
Non-normal (0 – 7)	2855	29.1
Normal (>8)	6963	70.9
Stress		
Non-normal (0 – 14)	1161	11.8
Normal (>15)	8657	88.2
Religious*	37.77	7.02
Knowledge*	61.91	10.73
Attitude*	46.70	9.33
Social support from significant others*	5.79	1.08
Social support from family*	5.87	1.04
Social support from friends*	5.55	1.08

*Mean and standard deviation.

0 – 9, 0 – 7, and 0 – 14, respectively. Most respondents (73.1%) did not experience depression, 70.9% did not experience anxiety, and 88.2% did not experience stress problems.

On average, the respondents had a high religiousness score of 37.77 (low, 0 – 37; high, >37). The mean knowledge and attitude scores were 61.91 and 46.70, respectively (weak, <17; good, >18). The social support scores for significant others, family, and friends were high at 5.79, 5.87, and 5.55, respectively (low, 1 – 2.9; medium, 3 – 5; high, >5.1 – 7).

Drug Supply Source and Drug Users

There were three sources of drug supply (Figure 1): friends, neighbors, and family members. The respondents obtained drugs mainly from friends (4.38%), followed by neighbors (0.13%) and family members (0.09%). Figure 1 also shows that 431 respondents (4.39%) had used drugs in the last 30 days and that 9387 respondents had never used drugs. The most popular or frequently used drugs were cannabis (3.4%), followed by amphetamine-type stimulants (1.9%) and kratom (ketum) (1.8%) (Table 3).

Logit Regression Analysis Diagnosis

Logit regression analysis diagnosis was used to ensure that the study model was accurate (Table 4). The diagnostic test began with a likelihood chi-square ratio test showing a value of 1742.56 with a degree of freedom of 20. The value is significant at the significance level of .010, indicating that the data fit on the model. The pseudo- R^2 was .4926, indicating that as much as 49.26% of the independent variable variance could describe dependent variables. The Hosmer – Lemeshow test, aimed at testing model match accuracy, showed that the p -value was not significant, indicating that the match was correct.

The classification test showed that 96.36% of the predictions made by the model were accurate. The model had 38.75% sensitivity and 99.01% specificity. Sensitivity measures the proportion of correctly classified events (in this study, it is drug use) and specificity measures the ratio of incorrectly classified events. In accordance with the results, the false-positive and false-negative rates were 2.76% and 35.77%, respectively.

Multiple collinearity testing showed that the average variance inflation factor (VIF) value was <10, that is, 2.39, and all tolerance values of 1/VIF were not more than 1. This suggests that there was no problem of multicollinearity (independent variable

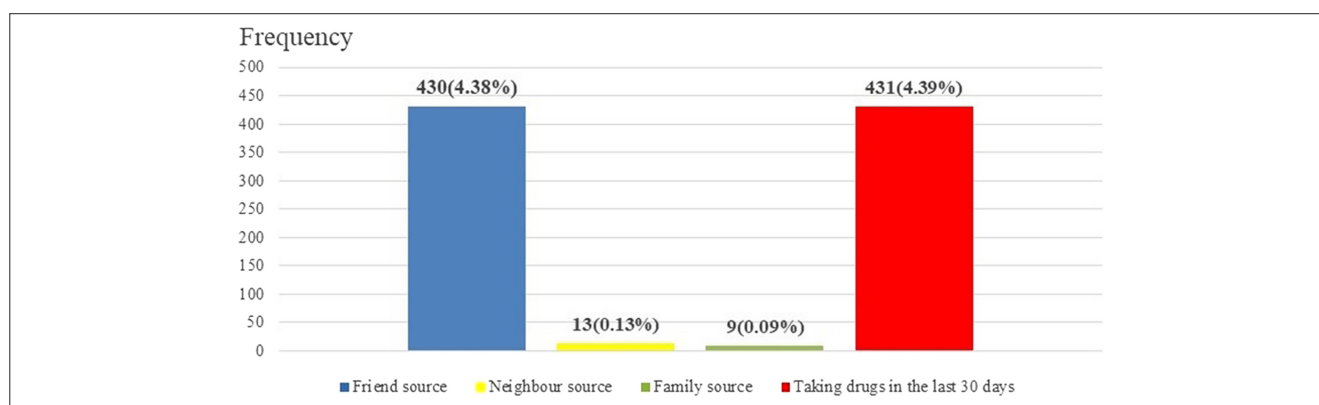


Figure 1. Drug supply source and drug users.

Table 3.
Types of Drug Users

Information	Use Drugs Within 30 days	
	Number	Prevalence (%)
Cannabis (cannabis, hashish, marijuana, and others)	219	2.23
Cocaine (coke, crack, and others)	137	1.40
Types of ATS (syabu, ice, ecstasy, stone, Yaba pills, and others)	188	1.91
Solvent/inhalant (nitrous, glue, petrol, thin paint, and others)	77	.78
Sedatives or sleeping pills (diazepam, alprazolam, midazolam, and others)	76	.77
Hallucinogens (LSD, acid, mushrooms, trips, ketamine, and others)	82	.84
Opiates (heroin, morphine, methadone, buprenorphine, codeine, and others)	77	.78
Others (ketum, depressant, dissociative)	181	1.84

LSD, lysergic acid diethylamide.

Table 4.
Diagnosis Model for Maximum Likelihood Logit Model
Parameter Estimates of Drug Abuse (n = 9818 observations)

Information	Value	
Likelihood chi-square (20)	= 1742.56	
Significant	= .0000	
Log likelihood	= -897.36791	
Pseudo R ²	= .4926	
Goodness-of-fit test	Pearson chi ² (8908)	= 4259.57
	Significant	= 1.0000
Classified	Correctly classified	= 96.36%
	Sensitivity	= 38.75%
	Specificity	= 99.01%
	False positive + rate for true	= 35.77%
	False negative – rate for true	= 2.76%
Mean VIF	= 2.39	

VIF, variance inflation factor.

overlap) in the model, given that the VIF value was <10 (Gujarati & Porter, 2009).

Risk and Protective Factors of Youth Involvement in Drug Abuse

Table 5 shows the nine risk and protective factors of drug use among the respondents. First, obtaining drugs from friends was a major factor in causing the respondents to engage in drug use. This was proven by the coefficient value (2.090) and odds ratio (8.086) being larger than that of the other factors. Additionally, the data indicated that obtaining drugs from friends increased the respondents’ proclivity for drug use by 8.086 times. Second, there was a significant and positive relationship between the male gender and drug use status (odds ratio = 4.534).

Third, there was a positive and significant relationship between drug use and all ages. The respondents aged 19 – 24 years and 31 – 35 years demonstrated 2.775 and 3.129 times greater proclivity, respectively, to abuse drugs as compared to early youth (age 15 – 18 years). However, between the ages of 31 and 40 years,

there was a 1.9% decrease in drug abuse tendency as compared to young age (age 15 – 18 years).

Fourth, there was a positive and significant relationship between anxiety level and drug use status (odds ratio = 2.470). This suggests that respondents with anxiety symptoms abused drugs 2.470 times more frequently than respondents who did not experience anxiety symptoms. Fifth, there was a positive and significant relationship between singlehood and drug use status (odds ratio = 1.821). This suggests that single respondents were 1.821 times more likely than married respondents to abuse drugs.

Sixth, there was a positive and significant relationship between negative influences (desire to try something new, to have fun, to relieve stress, as a stimulant, to ease pain, and unconsciousness or ignorance) and drug use status. The odds ratio for negative influences was 1.089, suggesting that an increase in negative influences increases the likelihood of engaging in drug use by 1.089 times. In short, a greater negative influence score indicated a greater likelihood of substance abuse. Seventh, there was a positive and significant relationship between drug knowledge (drug effects) and drug use status (odds ratio = 1.051). This implies that increased drug knowledge results in 1.051 times increased probability of engaging in drug abuse.

Eighth, there was a positive and significant relationship between antisocial behaviors and drug use status (odds ratio = 1.048). This means that increased antisocial behaviors increase the likelihood of engaging in drug usage by 1.048 times. Ninth, there was a negative and statistically significant relationship between depression and substance use status (odds ratio = 0.603). Based on this finding, respondents who do not have depression also use drugs.

Table 5 depicts the three factors that influence and prevent young people from misusing drugs. First, there was a negative and statistically significant relationship between attitude (dislike of drugs) and drug use status (odds ratio = 0.970). A higher attitude score indicated a reduced likelihood of engaging in drug use by 0.970 times.

Second, there was a negative and statistically significant relationship between social support from friends and drug use status (odds ratio = 0.963). Higher peer social support scores reduced the risk of engaging in drug use by 0.963 times. Third,

Table 5.*Maximum Likelihood Logit Model Parameter Estimates of Drug Abuse (n = 9818 Observations)*

Drugs Abuse Status (1 = Drugs Abuse; 0 = Non-Drugs Abuse)	Coefficient	Adjusted Odds Ratio	Standard Error	Z Score	p	95% (Confidence Interval-Odds Ratio)		1/VIF
Current age (references 15 – 18)								
19 – 24 years old	1.021	2.775	.833	3.400	.001	1.541	4.997	.364
25 – 30 years old	1.141	3.129	.940	3.800	.000	1.737	5.639	.320
31 – 40 years old	.642	1.900	.612	2.000	.046	1.012	3.571	.242
Gender (men vs. women)	1.512	4.534	1.328	5.160	.000	2.553	8.050	.858
Marriage status (single vs. married)	.599	1.821	.303	3.600	.000	1.314	2.523	.566
Antisocial behavior score	.047	1.048	.009	5.200	.000	1.030	1.067	.715
Negative influence score	.085	1.089	.012	7.770	.000	1.066	1.112	.501
Source of drugs (Reference: no source)								
Source of drugs from friends	2.090	8.086	1.330	12.710	.000	5.859	11.161	.546
Source of drugs from neighbor	-.140	.869	.323	-.380	.705	.420	1.800	.984
Source of drugs from family members	.495	1.641	.776	1.050	.295	.649	4.146	.975
Mental health								
Depression (depression vs. normal)	-.506	.603	.149	-2.050	.040	.372	.977	.195
Anxiety (anxiety vs. normal)	.904	2.470	.590	3.780	.000	1.547	3.946	.192
Stress/pressure (pressure vs. normal)	.204	1.227	.228	1.100	.271	.853	1.766	.613
Knowledge score	.050	1.051	.008	6.280	.000	1.035	1.068	.481
Personality score	-.031	.970	.010	-2.990	.003	.950	.989	.499
Religion score	-.012	.988	.010	-1.180	.238	.970	1.008	.758
Social support								
Nearest people score (significant others)	.015	1.015	.021	.720	.470	.975	1.057	.365
Family members score	-.078	.925	.021	-3.370	.001	.884	.968	.317
Friends score	-.038	.963	.018	-1.970	.049	.928	1.000	.539
Constant	-7.874	.000	.000	-12.670	.000	.000	.001	-

VIF, variance inflation factor.

the relationship between family members' social support and drug use status was negative and statistically significant (odds ratio = 0.925). In other words, the likelihood of abusing drugs was reduced was 0.925 times if family members provided more social support. The findings show that obtaining drugs from neighbors or family members, social support from significant others, and stress are all non-significant contributors to substance abuse.

Discussion and Conclusion

Gender is a factor of involvement in drug use and men are more likely to use drugs than women. We also found that many drug and substance users were men, which is in line with a previous study (Avasthi et al., 2018). Men are usually more knowledgeable and more likely to engage in more risky behavior. Adolescents

and youths aged ≥ 25 years are usually more at risk of being involved compared to older people, which is in line with the nature of the Malaysian population, where the majority are adolescents and youths aged < 40 years. Our findings are in line with that of previous studies stating that men are more likely to use drugs than women (Becker & Hu, 2008; Cotto et al., 2010; McCabe et al., 2007). Nonetheless, others have found that women develop drug addiction more quickly. This is evidenced by the studies of Griffith and France (2019) and Lynch et al. (2002), who showed that women are more prone to drug addiction than men and that women require higher doses of drugs than men.

We also found that increasing age increased the tendency to use drugs. Among early youths (age 15 – 18 years), the tendency to use drugs increased from 2-fold to 3-fold compared to that of

early adults (age 26 – 30 years). This is related to each person's life phase, where most people in the early phase of youth are still in school and other educational institutions (Chulenberg et al., 2015). This stage is very critical and a person will easily become engaged in problematic behavioral activity (Crews et al., 2007). Then, they will move on to their next phase of life, that is, from studying to work, single to married, and others. At this stage, however, the drug use recruitment trend also increases. This is due to the change in the environment that causes a person to experience stress at work, financial problems, family problems, peer influence, and mental health issues. This can drive the person to use drugs as a solution to their problems (Farnicka & Bettin, 2019). However, the last age of youth (aged 31 – 40 years) shows a significantly decreased tendency for drug use. This may be due to the fact that youths in this phase have experienced changes in maturity and life stability and begin to think of more positive things such as raising children and strengthening the family's economy. These findings are in line with that of Heradstveit et al. (2020) in Norway, which showed that drug consumption is linearly related to age. This relationship means that people aged 18 – 28 years showed increased drug use. However, at the age of 29 – 35 years, the relationship became Ω -shaped, meaning that the tendency to use drugs increased to a point and gradually decreased after a certain age. Many studies have shown that substance intake at an early age will tend to be involved in future drug addiction (Crews et al., 2007; Farnicka & Bettin, 2019).

Marital status factors were important predictors of drug-using propensity. Our analysis showed that being married was a protective factor against drug use. The findings contrast with that of Umukoro et al. (2006) in the United States, which showed that marital status does not play a significant protective role in substance and drug use and addiction.

Further, our findings demonstrate that involvement in drug use is due to negative influences, such as the desire to try something new, to have fun, to relieve stress, as a stimulant, to relieve pain, and unconsciousness or ignorance. These findings are in line with the study by Geramian et al. (2012), who found that pleasure-seeking and curiosity were factors of involvement in drug use. Our findings are supported by that of Garechaba et al. (2017) and Mesic et al. (2013), who showed that adolescents use drugs to attempt to relieve stress, followed by the purpose of having fun.

Our study also shows that a higher drug knowledge score leads to more risk of drug abuse. Our findings are supported by that of Abudu (2008), who indicated that despite being aware of the dangers associated with drug usage, youths would persist with the habit. This is because youths have a general overview of drugs but lack specific knowledge of the chemical composition of a substance. Consequently, an individual is tempted to sample the contents of the drug. Additionally, even if youth were aware of the dangers of drug misuse, stress, or peer pressure, a drug supply from friends may nonetheless lead to irrational thinking and impair the ability to make reasonable decisions (Hsu et al., 2014).

We found that antisocial behavior was a cause of involvement in drug use. Here, antisocial behavior was measured based on the frequency with which respondents engaged in activities such as stealing, gang-fighting, hitting, breaking into buildings or

vehicles, and other criminal activities. Their involvement in these activities may be related to drug use or result from the influence of drugs, where they became someone who dared to carry out such activities. These results support the findings of Claro et al. (2015) and Whitesell et al. (2013), who studied adolescents engaged in antisocial behavior, criminal cases, and street violence, most of whom used drugs or were under the influence of drugs.

A protective factor against drug use in youths is a positive attitude. Attitude is an important element of the internal defense for preventing drug use. We found that respondents with high attitude scores were not prone to being involved in drugs. This may be because the improved attitude encourages avoiding drug use. Our findings are in line with that of Razali and Kliewer (2015), who stated that a negative attitude toward strong drug use protects adolescents from engaging in drug abuse.

Increased social support from significant others and family can also reduce the tendency to use drugs. Our results are in line with that of Parada et al. (2015), who reported a relationship between family support as a protective factor against involvement in substance abuse. In short, family support factors such as love and upbringing are very important for curbing youth involvement in drug use. Insufficient support from family members will cause youths to tend to seek other sources of happiness, particularly drug use. This was proven by Adeyemo et al. (2016) in Nigeria, who showed that drug abuse among students was associated with a lack of appropriate parental love and care.

Practical Implications

The relationship between the risk and protective factors and drug abuse shows that sourcing drugs from friends is the main risk factor of drug abuse. Therefore, the authorities should focus on the individual's group of friends to combat drug trafficking activities. The authorities also need to work with the local community to obtain information quickly. We also advise the authorities to devise digital applications to facilitate information distribution to the community. Increasing age will also increase the tendency toward drug abuse. This is proven by studies showing that the tendency to use drugs increases from two to three times in the early stages of youth. These findings may be related to the changing phases of an individual's life, which span school to work, being single to married, and so on, that cause environmental changes such as emotional stress at work, financial problems, family problems, peer influence, and mental health issues. This situation causes individuals to be tempted to abuse drugs as a solution to their problems. However, the last stage of youth showed a decreased tendency towards drug abuse by about three times. This may be due to youths having experienced a changing phase of maturity and life stability. Antisocial behavior, referring to stealing, gang fights, hitting, and breaking into buildings or vehicles, leads to drug abuse, which emboldens youths to perform such activities. Our results support that of Claro et al. (2015) on the increased antisocial behavior (criminal cases) and violence related to drug use.

Mental health problems such as stress led to the tendency of youths to abuse drugs. Such a condition may be due to emotional stress stemming from a troubled family, work stress, financial problems, and others. Therefore, the authorities should provide

a platform for youths with emotional stress problems so that the level of severity can be identified and counseling services can be provided to these groups. This platform would make it possible to prevent drug abuse. We also found that factors in drug use or abuse are related to increased drug knowledge. Although the respondents had extensive knowledge about drugs, especially their disadvantages and effects, this was unable to prevent substance abuse. Therefore, the authorities should re-evaluate the contents of each existing program and campaign to yield a deeper awareness of the effects of drug use.

The protective factor against drug use among youths is the attitude of disliking drugs. Attitude is an important element of the internal defense for preventing drug abuse. We found that respondents with a drug-disliking attitude score had reduced involvement with drugs. Therefore, the attitude of rejecting drugs should start from childhood and should be consistent until adulthood. This is because a strong rejection attitude will be protective against negative actions such as drug abuse. In addition, the role of family members is very important for preventing drug abuse among youths. Therefore, parents must always accompany their children by spending space and time with them so that they can share their problems in daily life.

Limitations and Directions/Suggestions for Future Research

The cross-sectional study design limits the causal relationship of the factors towards drug use among adolescents. However, the findings give insight for future studies to explore qualitatively in depth the risk and protective factors among adolescents by involving many stakeholders, neighborhoods, and peers.

The risk and protective factors of drug use among youths are multifactorial and interact with each other. Friends being a source of drugs is the main risk factor while a positive attitude is a protective factor. Policymakers and stakeholders should focus on these factors to achieve a drug-free country.

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Informed Consent: Written informed consent was obtained from all participants who participated in this study and parental consent was obtained for those aged <18 years.

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