

AN ANALYSIS OF SMOKING BEHAVIOUR AMONG SCHOOLING ADOLESCENTS

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Abstract

This paper examines the extent of cigarette smoking among 16 year old adolescents in Malaysian secondary schools. In particular, it examines the determining factors of smoking behaviours across several characteristics of the students and selected variables related to their aspirations and ambitions. A total of 4404 students participated in the survey comprising 1966 males and 2438 females. Overall, 13 percent of the respondents admitted to cigarette smoking. The proportion of smokers among males is 27 percent compared with two percent of the females. Almost 25 percent started smoking at 12 years or younger and that 35 percent smoked at least six cigarettes daily. The main reasons for smoking include stress and emotional problems, peer as well as parental influence. The data also showed the number of cigarettes smoked per day significantly increased with increasing hours students spent their time at the school library but decreased with increasing hours students spent on computers. Several variables related to the aspirations and ambitions were found to have significant influence on the number of cigarettes smoked per day among the adolescent smokers.

Key words: schooling adolescents, cigarette smoking, aspirations, regression.

Introduction

Research on substance abuse, in particular, smoking among young people has received considerable attention in recent years not only because of the increasing trend in the incidence of smoking worldwide but perhaps more importantly because of the declining in age at the initiation of smoking. For example, Foster, Zalot, and Jones (2007) reported that 30 percent of adolescents in the United States admitted to having smoked at least once during their lifetimes while in Chile, at least 50 percent of the students acknowledge a history of tobacco smoking (Caris, Varas, Anthony, and Anthony, 2003). Similar findings by Kyrlesi, Soteriades, Warren, Kremastinou, Papastergiou, Jones and Hadjichristodoulou (2007) showed that about 32 percent of 13–15 year old students in Greece admitted that they had tried tobacco in the past and that one in every four smokers reported that they began smoking before the age of 10 years. In Japan, a study by Ando, Asakura, Ando and Simons-Morton (2007) of junior high school students found that 18 to 45 percent reported having tried tobacco and 42 percent reported smoking. The trend in cigarette smoking is especially worrying in Sweden with almost 500 children and young people would start smoking each week and that the use of tobacco is usually established in the teens, with the quickest increase occurring at age 14–15 (Edvardsson and Hakansson, 2000). High prevalence of regular smoking among teenagers was also observed in France, Spain, Iraq, South Africa, Turkey and Indonesia (Bosanquet and Magee, 1999; Siziya, Muula and Rudatsikira, 2007; Ntomehukwu Madu and Patience Matia, 2003; Akpınar, Yoldascan and Saatci, 2006; Smet, Maes, De Clereq, Haryanti and Winarno, 1999). The incidence of adolescent smoking in Malaysia is no different from that of the other countries. A study on 18 year olds in Malaysia found that 30 percent admitted to smoking

with a higher proportion among the males (59%) compared to only four percent of the females (Hashim, 2007).

One of the main concerns of cigarette smoking at such a young age is its effect on later involvement in other health risk behaviours including drug and alcohol consumption. It is the single most important risk factor for non-communicable chronic medical conditions (Rudatsikira, Dondog, Siziya, Muula, 2008). Studies have also shown the association between early smoking experience with continuing heavy smoking habit and later use of other drugs (Edvardsson and Hakansson, 2000; Vittetoe, Lopez, Delva, Wagner and Anthony, 2002; Sharma, 2006). In view of the high prevalence of smoking and the need to curb this problem, numerous research has been carried out to study the reasons and the determinants of smoking behaviour among schooling adolescents. For example, Bosanquet and Magee (1999) found the dominant influence of friends and peers in initiating smoking among French and Spanish adolescents. This result was concurred by Smet, Maes, De Clereq, Haryanti and Winarno (1999) who did their study in Indonesia, Sylvester and Ma-Queen (2003) in their study in South Africa, Akpınar, Yoldascan and Saatci (2006) in Turkey as well as Siziya, Muula and Rudatsikira (2007) in their examination of correlates of cigarette smoking in Iraq. Other important determinants of smoking include gender, family members' smoking behaviour and socio-economic variables. While all of the earlier studies found that prevalence of smoking was significantly higher among males compared to females, none of these studies had investigated the influence of variables related to adolescents' aspirations and ambitions on smoking behaviour. Thus it is the interest of this paper to examine the relationship between smoking behaviour and students' aspirations in Malaysia.

Methodology of Research

The participants for this study consisted of tenth grade 16 year old students in public secondary schools in Malaysia. Cluster sampling procedure was employed to obtain the sample using schools as clusters. The first stage involved random selection of two schools from each of the 13 states followed by the selection of all the tenth grade students in these selected schools. In total 4404 students comprising 1966 males and 2438 females from 26 schools participated in the study.

A survey was carried out in these schools to obtain the primary data using self-administered questionnaire. The students were assembled in a large hall and told of the purpose of the study with assurance given on the confidentiality of all information and their responses provided in the questionnaire. Included in the questionnaire were items pertaining to students' personal and family background as well as several constructs covering the cognitive and psycho-social domains. Each construct was pilot-tested and refined to establish objectivity, validity and reliability. The cognitive domain includes questions on general knowledge while the psycho-social domain includes family relationship scales, self-esteem scales and aspiration scales. The data were analysed using SPSS (Statistical Package for Social Scientists) to generate the descriptive statistics concerning the prevalence of smoking among the respondents. Further analysis examined the determinants of the extent of smoking, as measured by the number of cigarettes smoked per day, using linear regression model.

Results of Research

Incidence of smoking

Overall 13.3 percent of the respondents admitted to cigarette smoking with the proportion of males who admitted to smoking being so much higher than the female students (27.1% and 2.2%, respectively). Among those who admitted to smoking, 56 percent reported they smoked fewer than five cigarettes per day, about 35 percent of the students smoked at least six cigarettes daily and nearly six percent admitted to smoking more than 10 cigarettes daily.

The data in this study show that almost 25 percent started smoking in primary school that is, between the ages of seven to twelve years. The majority of these adolescents started smoking while in secondary school, with most of them starting when they were 13 to 15 years old. It is important to note that the proportion of students who started smoking at 16 years of age is very small (5.6%) compared with those who began a year earlier (25.4%). This could be due to the fact that students tend to enjoy a long school holiday after a major national examination, the Lower Secondary Assessment, at the end of Grade 9. This trend is worrying as cigarettes are addictive and unless intervention is done, the likelihood of these young smokers becoming very heavy smokers later on in life is very high. Coupled with the fact that quite a large proportion of these smokers also started smoking as early as in primary school, this should be heeded by those concerned if the smoking habit is to be curbed.

Several reasons were cited by the adolescent smokers. Stress and emotional problems top the list with 35 percent, followed by 27 percent who answered to be accepted by peers, 19 percent to feel cool and macho, 10 percent because of parental influence, 7 percent media influence and about three percent of the respondents smoked to get attention from friends and to lose weight.

Determinants of Smoking

Having identified the respondents who admitted to cigarette smoking, further analysis attempts to evaluate the determinants of the extent of smoking using linear regression. The dependent variable of interest is the number of cigarettes smoked per day while the independent variables comprise gender, father's income, mother's income, whether the students have friends who smoke, age when they started smoking, hours spent at the library, frequency and hours spent on computers, frequency of discussions with parents on school work and twelve items related to aspirations and ambitions of the students.

With regard to aspirations and ambitions, the respondents were asked to rate on the twelve statements and their responses according to level of agreement or disagreement. This is presented in Table 1. The data suggest that about 96 percent of the students want to become moral and ethical persons in their lives. A high proportion of the respondents are still searching to know and understand who they are (93%) and an equal proportion agreed that they want to learn new things, followed by those who aspire to achieve the highest level of education (92%). However, not many want to become famous or well-known as agreed by less than half of the total respondents (48%).

Table 1. Percentage Distribution of Students' Aspirations.

Item	Strongly Agreed	Agreed	Disagreed	Strongly Disagreed
To become rich	24.5	51.1	22.7	1.7
To help others without rewards	42.5	46.2	10.1	1.2
To have a lot of friends	38.9	49.5	11.1	0.5
To preserve the environment including wild animals	44.2	47.4	7.2	1.3
To become famous or well-known	16.4	30.3	48.0	5.3
To learn new things	46.1	46.4	6.5	1.0
To become pious	36.8	45.2	16.0	2.0
To help the needy and those oppressed by cruelty	44.7	44.4	8.4	2.5
To know and understand <i>Who am I</i>	54.9	38.3	6.0	0.0
To have the highest level of education	49.8	41.7	7.9	0.6
To create new things	37.6	48.1	13.1	1.2
To become a moral and ethical person	59.9	35.9	3.4	0.8

The regression analysis in Table 2 gives the results for two models. The full model incorporates all the independent variables while the reduced model only selects the significant coefficients from the full model. The adjusted R-Square for the reduced model is the same as that for the full model indicating the goodness of fit of the reduced model. The result suggests that 50 percent of the variation in the number of cigarettes smoked can be explained by the regression model. Female respondents and longer hours spent on the computer have a significant negative effect on the number of cigarettes smoked per day while hours spent in the library and later initiation of smoking have opposite effects.

Six of the twelve aspiration items have a significant influence on the number of cigarettes smoked per day. The number of cigarettes increases among adolescent smokers with a higher level of disagreement to become rich, to learn new things and to become pious. Significant negative effects are observed with respect to the increasing level of disagreement to help others without rewards, to have a lot of friends and to become famous.

Table 2. Determining Factors of the Number of Cigarettes Smoked.

Variables	Full Model		Reduced Model	
	Standardized coefficients	t-value	Standardized coefficients	t-value
Female	-0.81	-6.619*	-0.082	-7.108*
Father's Income	0.006	0.446		
Mother's Income	0.003	0.237		
Have friends who smoke	0.008	0.679		
Age started smoking	0.668	58.078*	0.671	59.481*
Hours spent at school library per week	0.031	2.837*	0.032	2.972*
Frequency of computer usage	-0.014	-1.036		
Hours spent on computer per week	-0.028	-2.116*	-0.032	-2.956*
Frequency of discussion with parents on school work	-0.010	-0.861		
To become rich	0.031	2.319*	0.030	2.323*
To help others without rewards	-0.053	-3.976*	-0.050	-3.929*
To have a lot of friends	-0.036	-2.730*	-0.034	-2.671*
To preserve the environment including wild animals	0.019	1.387*		
To become famous or well-known	-0.056	-4.128*	-0.053	-4.087*
To learn new things	0.038	2.689*	0.039	3.079*
To become pious	0.050	3.792*	0.051	4.116*
To help the needy and those oppressed by cruelty	-0.001	-0.058		
To know and understand <i>Who am I</i>	-0.021	-1.460		
To have the highest level of education	0.012	0.797		
To create new things	0.003	0.209		
To become a moral and ethical person	-0.002	-0.121		
Adjusted R-Square	0.495		0.496	
	*Significant at 5%		*Significant at 5%	

This study examines the prevalence of smoking among 16 year old schooling adolescents in Malaysia. It also examines the determining factors of the extent of smoking as measured by the number of cigarettes smoked per day. The findings of this study do confirm those of earlier studies. For example, the dominance of peer and parental influence on smoking behaviour in this data set are indeed consistent with Bosanquet and Magee (1999), Smet, Maes, De Clereq, Haryanti and Winarno (1999), Akpınar, Yoldascan and Saatci (2006), Siziya, Muula and Rudatsikira (2007) and Rudatsikir, Dondog, Siziya and Muula (2008). The high proportion of adolescents who smoked because of stress and emotional problems confirms the findings of Lucas and Lloyd (1999) and Sylvester & Ma-Queen(2003).

Examination of the factors of the extent of smoking revealed that parents' incomes and having friends who smoke did not have a significant influence on the number of cigarettes smoked per day. As expected, the significance of gender where being females is associated with fewer number of cigarettes is also consistent with the findings of earlier studies. The data also showed the number of cigarettes smoked per day significantly increased with increasing hours students spent their time at school library but decreased with increasing hours students spent on computers. With regard to the students' aspirations and ambitions, the study revealed that the number of cigarettes smoked per day increased among adolescent smokers who disagreed to become rich, to learn new things or to become pious while the opposite is true for those who disagreed to help others without rewards, to have a lot of friends or to become famous.

The findings of this study suggest an important advance in identifying the extent and the determining factors of cigarette smoking among 16 year old schooling adolescents. Future studies should incorporate longitudinal designs to capture the trend, patterns, risks and resiliency factors associated with adolescent smoking behaviour. This would provide useful information in devising both preventive and tertiary interventions for them.

References

- Akpınar, E., Yoldascan, E. & Saatci, E. (2006). The smoking prevalence and the determinants of smoking behaviour among students in Cukurova University, Southern Turkey. *West Indian Medical Journal*, Vol. 55, No. 6, 414–419.
- Ando, M., Asakura, T., Ando, S. & Simons-Morton, B.G. (2007). Psychosocial factors associated with smoking and drinking among Japanese early adolescent boys and girls: Cross-sectional study. *BioPsychoSocial Medicine*, 1–13.
- Bosanquet, N., Magee, J. (1999). Adolescents and smoking: evidence from France and Spain, *Journal of Adolescence*, 22, 601–605.
- Caris, L., Varas, M., Anthony, C. B. & Anthony, J.C. (2003). Behavioral problems and tobacco use among adolescents in Chile. *Rev Panam Salud Publica/Pan Am J Public Health*, 14(2), 84–90.
- Edvardsson, I. & Hakansson, A. (2000). Development of schoolchildren's smoking habits: questionnaire studies in intervention and control groups. *Acta Paediatr*; 89, 1257–61.
- Foster, S.E., Zalot, A.A. & Deborah, J. J. (2007). Cigarette Smoking among African American Youth from Single Mother Homes: Examining the Roles of Maternal Smoking and Positive Parenting within an Extended Family Framework. *International Journal of Behavioral Consultation and Therapy*, 3(2), 96–109.
- Hashim, F. (2007). Substance abuse. In Hashim F. & Borhan L. (Eds). *A statistical snapshot of the 18 year old Malaysian adolescent*, Kuala Lumpur: Institut Sosial Malaysia, 9–21.
- Kyrlesi, A., Soteriades, E.S., Warren, C.W, Kremastinou, J., Papastergiou, P., Jones, N.R. & Hadjichristodoulou, C. (2007). Tobacco use among students aged 13–15 years in Greece: the GYTS Project. *BMC Public Health*, 7(3), <http://www.biomedcentral.com/1471-2458/7/3>.
- Lucas, K. & Lloyd, B. (1999). Adolescent smoking: the control of mood and body image concerns. *Health Education*, Number 1, 17–26.

Sylvester, N.M. & Ma-Queen, P.M. (2003). Illicit drug use, cigarette smoking and alcohol drinking behaviour among a sample of high school adolescents in the Pietersburg area of the Northern Province, South Africa, *Journal of Adolescence*, 26(1), 121–136.

Rudatsikira, E., Dondog, J., Siziya, S. & Muula, A. S. (2008). Prevalence and determinants of adolescent cigarette smoking in Mongolia, *Singapore Medical Journal*, 49(1), 57–62.

Sharma, M. (2006). Substance abuse in adolescents. *Journal of Alcohol and Drug Education*, 50(4), 88.

Siziya, S., Muula, A. S. & Rudatsikira, E. (2007). Correlates of current cigarette smoking among in-school adolescents in the Kurdistan region of Iraq. *Conflict and Health*, 1-13, <http://creativecommons.org/licenses/by/2.0>

Smet, B., Maes, L., De Clerq, L., Haryanti, K., & Winarno, R.D. (1999). Determinants of smoking behaviour among adolescents in Semarang, Indonesia, *Tobacco Control*. 8, 186–191.

Vittetoe, K., Lopez, M.F., Delva, J., Wagner, F., Anthony, J.C. (2002). Behavioral problems and tobacco use among adolescents in Central America and the Dominican Republic. *Rev Panam Salud Publica/Pan Am J Public Health*, 11(2), 76–82.

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