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Smoking among Malaysian Adolescents.

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ABSTRACT

Smoking has been one of the major causes of many chronic diseases, including cancer. Increase prevalence of early age smoking is major concern in Malaysia. The aim of this study is to investigate the prevalence, contributing factors and perception towards early age smoking in. A validated questionnaire was distributed to 300 respondents with the age range from 10 to 19 years old. Collected data was analyzed using SPSS version 20 using t-test, one-way ANOVA, chi-square test, correlation and regression. The prevalence of smoking is 34% in which majority of the smokers are Malay, Muslim and male. Smoking status was found to be associated with religion, gender, and ethnicity. The mean age to start smoking is 11 years old. The factors that contribute to smoking are curiosity, peer influence, smoking father and to fit in with friends. Meanwhile, the level of perception towards early age smoking is good. Educational level found to be associated with perception towards early age smoking and a negative correlation was found between age and perception towards early age smoking. The findings of this study can be used as a guide for future plan and implementation for proper intervention in Malaysia

Keywords: Smoking, Contributing Factor, Cancer prevention, Malaysia

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INTRODUCTION

Smoking has been one of the major causes of many chronic diseases such as heart disease, lung cancer and stroke. There had been many interventions done to decrease the prevalence of smokers around the world. The prevalence of smoking still very high in spite of many government efforts and programs had been conducted for over the past decade[1].

Globally, 1.1 billion individual smokes at this moment. A study was conducted by Global Tobacco Surveillance System and WHO World Health Surveys have been demonstrated that four-fifths of the world's 1.1 billion smokers are from low or middle-income nations. This shows that most of the smokers live in developing countries where there has been an increase in the smoking rate. Notwithstanding smoking is the most preventable reason of death, 5 million deaths occurs yearly, if nothing change soon, smoking will cause 8 million deaths annually by 2030 [2].

There are a rising number of smokers which belonged to school aged and this had become a major concern as there has been an increase in the prevalence of early age smoking. A few studies had been done both in Malaysia and overseas shows the prevalence of smokers in early age has been increase. Early age smoking which defined from Washington study shows that the peak years for first trying to smoke begin in age of 11 to 13 years old and nearly 5% from the ages of 10 to 11 years old[3]. A Malaysian study smoking among students showed that the prevalence of smoking was 35.5%[4]. Other studies done in Greece showed that the 43.3% of smokers started smoking before 14 years old[5]. Furthermore, a study from Negeri Sembilan, Malaysia had been done which showed that the prevalence of students who start smoking at 13 to 14 years of age was about 37.8%[6]. There are a lot of factors that contribute towards early age smoking, for example socio-demographic factors such as age and gender, other than that is environmental factors such as parental smoking, moreover, behavioural factors also contribute towards early age smoking such as drug or alcohol use, next is lifestyle factor such as lack of exercise and lastly, personal factors such as stress[6]. These factors are supported by a few studies, for example a study done in Petaling District, Selangor shows that the highest contributing factor with evidence of 80% of their respondent who are current smoker started with smoking with peers[7]. A research done by Tarafdar *et al* stated that the factors that influence the smoking among adolescents are smoking parental, smoking peer and unhealthy environmental[8].Smokers can have different perception towards smoking compared with non-smoker. Based on Indonesian study, perceptions towards smoking have significant difference between non-smokers and smokers[9]. In this study, smokers think that smoking is acceptable if they do not smoke around the individual who are not smoking, and non-smokers think that smoking is harmful to health.

The aim of this study was to determine the prevalence and associated factors of early age smoking among poor urban in Malaysia and the objective is to study the prevalence & contributing factors towards early age smoking in community.

METHODOLOGY

This study was conducted at Pangsapuri PPR Kampung Baru HICOM, Seksyen 26, Shah Alam, Selangor, Malaysia. The total population of this area is approximately 5000 people with total houses of about 980. The data collected from 7th September 2017 until 9th October 2017. A cross-sectional study was carried out to determine the prevalence of smoking and associated factors among this population. The variables in this study include socio-demographic such as (race, religion, educational level and household income). Further factors studied were spirituality, smoking status, contributing factors and perception towards early age smoking.

Study Design and Variables

A cross-sectional study was carried out which aims to measure the prevalence of health outcomes or determinants of health, or both, in a population at a point in time or over a short period. The variables in this study include demographic details such as (race, religion, educational level and household income), spirituality, smoking status, contributing factors and perception towards early age smoking in Pangsapuri PPR Kampung Baru HICOM.

Sample size calculation using EPI software

Total sample size= 227 + 30% expected non-respondent = 295.

In this study, we add 30% expected non-respondent in the total sample size calculation as this is based on a previous study which states that it is wise to oversample the number of samples required as this will prevent discrepancies from non-respondent or missing values later[10].

Eligibility

An inclusion criterion for this study is that respondent must be of age 10 until 19 years old and individual who can understand Malay or English. The criteria that disqualify an individual from joining this study are individual who are deaf or mute and individual with mental illness. Ethical approval was obtained from research ethics committee of Research Management Institute of Universiti Teknologi MARA (UiTM).

Data Collection Tool

The instrument used in this study is a validated questionnaire on smoking status. The instrument consists of five domains with a total of 48 questions. The survey tool was developed in stages which included literature search, discussion and pre-testing the questionnaire to make sure good content validity.

Domain 1: Socio-demographic: In this section, respondents were asked on their sociodemographic details such as age, gender, race, and economic status. There is a set of 8 questions in total.
Domain 2:Spirituality: This section contains 3 questions which aim to access the prevalence of smokers who prayed 5 times a day as well as to access on their knowledge about the smoking law with the sources.
Domain 3: Smoking status: This section comprises of 9 questions that assess on the smoking status whether they are smoker, ex-smoker or non-smoker. This section also accesses on the smoker's duration of smoking and the types of cigarette they used. Other than that, they were access on their attitude while buying the cigarette.
Domain 4: contributing factors towards early age smoking12 questions were asked on the contributing factors towards early age smoking which only the smokers need to answer .Questions on contributing factors were asked using scale (yes/ not sure/ no)and scores of ”1”,”2”,”3” for “yes”, “not sure” and “no” were given respectively.
Domain 5: Perception towards early age smoking: The last section consists of16 questions on the community's view on perception of the respondents towards early age smoking. Questions on perceptions were asked using scale (agree/ does not know/disagree). For good perceptions, scores of ”1”,”2”,”3” for “agree”, “does not know” and “disagree” were given respectively. For bad perceptions, the above scoring system was reversed.

Data collection method

Face to face interview was carried out to conduct this study. Questionnaire consists of 5 sections on socio-demographic details, spirituality, smoking status, contributing factors towards early age smoking and perception towards early age smoking.

Sampling method

Simple random sampling was used in this study. We use simple random sampling technique to randomly select a few houses that we would go and distribute the questionnaires. Only one individual will be selected from each house.

Data Analysis

The data was entered, cleaned and analysed by using SPSS version 20.0. Appropriate statistical test such as t-test, ANOVA test, Chi-squared test, correlation and regression were used according to the type of variables, and significance level will be taken at 95% or p-value of less than 0.05.

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Pilot study

A pilot study was done at UiTM Kampus Selayang before the actual study was initiated to pre-test/validate the set of questions in the questionnaire. We distributed the questionnaires to 18 participants. The result of pilot study has helped us in getting a clearer idea of what we wanted to know and helped in refining our research hypothesis.

RESULTS

The prevalence of smokers in this study was 34% in which up to 23% were the active smokers and the remaining 11% were the ex-smokers. A total of 300 questionnaires were distributed to the Pangsapuri PPR KampungBaru HICOM community. Three hundred respondents answered the questionnaires completely giving a response rate of 100%.Two hundred and thirty-nine (79.7%) were Malay and two hundred forty-four (81.3%) were Muslim. Most of the respondents (74%) were living with both parents. One hundred and six (35.3%) of respondent had lower secondary educational level followed by primary level of education which was 99 (33%). The mean house hold income was RM 1551.66 (SD±851.393) with118 (39.3%) of the respondents have both of their parents working. Two hundred and seventy-five (91.7%) of the respondents were unemployed. Most of the respondents (66%) were non-smoker. The mean age the respondents started smoking was 11.79 years (SD±2.759). The median duration the residents smoking cigarettes was 12 months and the median number of cigarettes smoked per day was 4 sticks. The mean age was 14.24years (SD±2.830) with 180 male respondents (60%) and 120 female respondents (40%) (Table 1).

Table 1: Socio-demographic details of the study participants (n=300)

Variables	Frequency (%)		Mean (SD)
Age (years)			14.24(2.830)
Household Income (RM)			1551.66(851.393)
Religion			
Muslim	244(81.3)		
Hindu	56(18.7)		
Gender			
Male	180(60)		
Female	120(40)		
Ethnicity			
Malay	239(79.7)		
Indian	61(20.3)		
Educational status			
No formal education	6(2)		
Primary	99(33)		
Lower secondary	106(35.3)		
Higher secondary	64(21.3)		
Tertiary	25(8.3)		
Live with	**Yes**	**No**	
Both parents	222(74)	78(26)	
Mother only	55(18.3)	245(81.7)	
Father only	10(3.3)	290(96.7)	
Sibling and others	13(4.3)	287(95.7)	
Family employment status			
Both parent working	118(39.3)	182(60.7)	
Only father working	106(35.3)	194(64.7)	
Only mother working	50(16.7)	250(83.3)	
Sibling working	35(11.7)	265(88.3)	
Both parent not working	11(3.7)		
Respondent employment status	25(8.3)	275(91.7)	
Smoking category			
Active smoker	70(23.3)		

Ex-smoker Non-smoker	32(10.7) 198(66)		
Smoking status Smoker Non-smoker	 102(34) 198(66)		
Age started smoking (years)			11.9(2.759)

For Muslims participants, one hundred and fifty (61.5%) residents did not pray five times a day. Most of the respondent which is one hundred and forty-five (59.4%) know that smoking was forbidden in Islam perspective and most of them (53.5%) knew about it from referred person followed by media which was 32 (20.4%) (Table 2).

Table 2: Spirituality details of Muslims participants (n=244)

Variables	Frequency (%)
Pray five times a day	
Yes	94(38.5)
No	150(61.5)
Islam perspective towards smoking	
Allow	10(4.1)
Encourage	6(2.5)
Forbidden	145(59.4)
Not sure	41(16.8)
I don't know	42(17.2)
Source of Islam perspective towards smoking	
Forgotten	18(11.5)
Referred person	84(53.5)
Books	14(8.9)
Media	32(20.4)
Event	9(5.7)

Ninety-eight (96.1%) residents used to smoke cigarettes followed by vaper which was 48 (47.1%). Sixty-five (63.7%) of the residents smoked more than one type. Eighty-two (80.4%) of the respondent bought the cigarettes by themselves. Seventy-eight (76.5%) of respondent does not smoked when only get free cigarettes. Fifty-five (53.9%) respondent had asked stranger to buy the cigarettes for them. Sixty-three (61.8%) of the respondent thought of quitting smoking (Table 3).

Table 3: Smoking status of smokers participants (n=102)

Variables	Frequency (%)	
Typed used to smoke	Yes	No
Cigarette	98(96.1)	4(3.9)
Shisha	31(30.4)	71(69.6)
Bidis	23(22.5)	79(77.5)
Vaper	48(47.1)	54(52.9)
E-Cigarette	16(15.7)	86(84.3)
Smoked more than one type	65(63.7)	37(36.3)
Source of cigarette		
Bought yourself	82(80.4)	20(19.6)
Friends	66(64.7)	36(35.3)
Family members give	13(12.7)	89(87.3)
Taken from family member without their knowledge	23(22.5)	79(77.5)
Pick up left over cigarettes	8(7.8)	94(92.2)
Only smoke when get free cigarettes	24(23.5)	78(76.5)
Ever asked a stranger to buy cigarettes	47(46.1)	55(53.9)

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Ever thought of quitting smoking	63(61.8)	39(38.2)

By using chi-square, there were statistically significant association between smoking status with religion, gender, ethnicity, living with both parents, only father working, respondent employment status, pray five times a day and Islam perspective towards smoking which the p value was less than 0.05 for eight of them (Table 4).

Table 4: Summary of association between socio-demographic details and smoking status (n=300)

Variables	Smoking status		X2 value	df	p- value	OR
	Smoker	Non-smoker				
Religion						
Muslim	94(38.5)	150(61.5)	11.925	1	<0.001	3.760
Hindu	8(14.3)	48(85.7)				
Gender						
Male	89(49.4)	91(50.6)	47.834	1	<0.001	8.050
Female	13(10.8)	107(89.2)				
Ethnicity						
Malay	92(38.5)	147(61.5)	10.577	2	0.001	3.192
Indian	10(16.4)	51(83.6)				
Educational status			4.051	4	0.399	
No formal education	2(33.3)	4(66.7)				
Primary	38(38.4)	61(61.6)				
Lower secondary	29(27.4)	77(72.6)				
Higher secondary	22(34.4)	42(65.6)				
Tertiary	11(44)	14(56)				
Living arrangement			4.320	1	0.027	0.571
1.Both parents						
• **Yes**	68(30.6)	154(69.4)				
• **No**	34(43.6)	44(56.4)				
2.Mother only			1.080	1	0.188	
• **Yes**	22(40)	33(60)				
• **No**	80(32.7)	165(67.3)				
3.Father only			1.180	1	0.244	
• **Yes**	5(50)	5(50)				
• **No**	97(33.4)	193(66.6)				
4.Sibling and others			2.385	1	0.108	
• **Yes**	7(53.8)	6(46.2)				
• **No**	95(33.1)	192(66.9)				
Family employment status						
1. Only father working			6.553	1	0.007	0.505
• **Yes**	26(24.5)	80(75.5)				
• **No**	76(39.2)	118(60.8)				
2. Both parent working						
• **Yes**	44(37.3)	74(62.7)	0.937	1	0.199	
• **No**	58(31.9)	124(68.1)				
3.Only mother working						
• **Yes**	20(40)	30(60)	0.963	1	0.206	
• **No**	82(32.8)	168(67.2)				
4.Sibling working						
• **Yes**	13(37.1)	22(62.9)	0.174	2	0.404	
• **No**	89(33.6)	176(66.4)				
5.Both parent not working			0.668	1	0.303	
• **Yes**	5(45.5)	6(54.5)				

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Respondent employment status						
• **Yes**	15(60)	10(40)	8.216	1	0.005	3.241
• **No**	87(31.6)	188(68.4)				
Variables	**Smoking status,**		**X2 value**	**df**	**p- value**	**OR**
	Smoker	**Non-smoker**				
Pray five times a day			46.450	1	<0.001	0.107
Yes	11(11.7)	83(88.3)				
No	83(55.3)	67(44.7)				
Islam perspective towards smoking			14.319	4	0.006	
Allow	7(70)	3(30)				
Encourage	4(66.7)	2(33.3)				
Forbidden	44(30.3)	101(69.7)				
Not sure	22(53.7)	19(46.3)				
I don't know	17(40.5)	25(59.5)				
Source of Islam perspective towards smoking			9.278	5	0.098	
Forgotten	12(66.7)	6(33.3)				
Referred person	28(33.3)	56(66.7)				
Books	4(28.6)	10(71.4)				
Media	10(31.3)	22(68.8)				
Event	3(33.3)	6(66.7)				

There is a statistically significant association between religion and smoking status. The odds of Muslim becoming a smoker are 4 times higher than Hindu [X^2 =11.925, p value is <0.001]. There is a statistically significant association between gender and smoking status. The odds of male becoming a smoker are 8 times higher than female [X^2 =47.834, p value is <0.001]. There is a statistically significant association between ethnicity and smoking status. The odds of Malay becoming a smoker are 3 times higher than Indian [X^2 =10.577, p value is 0.001]. There is a significant association between living with both parent and smoking status. The odds of becoming a smoker when living with both parents are 0.6 times lower than not living with parents [X^2 =4.320, p value is 0.027]. There is a significant association between only father working and smoking status. The odds of becoming a smoker when having only father working are 0.5 times lower than not having only father working [X^2 =6.553, p value is 0.007]. There is a significant association between respondent employment status and smoking status. The odds of becoming a smoker when being employed are 3 times higher than unemployed [X^2 =8.216, p value is 0.005]. There is a significant association between praying five times a day and smoking status. The odds of becoming a smoker are 0.1 times lower in praying five times a day than in not praying [X^2 =46.450, p value is <0.001]. There is a statistically significant association between Islam perspective towards smoking and smoking status[X^2 =14.319, p value is 0.006] (Table 5).

Table 5: Association between socio-demographic characteristics and smoking status (n=300)

Variables	**Smoking status,**		**X2 value**	**df**	**p- value**	**OR**
	Smoker	**Non-smoker**				
Religion						
Muslim	94(38.5)	150(61.5)	11.925	1	<0.001	3.760
Hindu	8(14.3)	48(85.7)				
Gender						
Male	89(49.4)	91(50.6)	47.834	1	<0.001	8.050
Female	13(10.8)	107(89.2)				
Ethnicity						
Malay	92(38.5)	147(61.5)	10.577	1	0.001	3.192
Indian	10(16.4)	51(83.6)				
Living with both parent						
Yes	68(30.6)	154(69.4)	4.320	1	0.027	0.571

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No	34(43.6)	44(56.4)				
Only father working						
Yes	26(24.5)	80(75.5)	6.553	1	0.007	0.505
No	76(39.2)	118(60.8)				
Praying five times a day						
Yes	11(11.7)	83(88.3)	46.450	1	<0.001	0.107
No	83(55.3)	67(44.7)				
Respondent employment status						
Yes	15(60)	10(40)	8.216	1	0.005	3.241
No	87(31.6)	118(68.4)				
Islam perspective towards smoking						
• Allow	7(70)	3(30)	14.319	4	0.006	
• Encourage	4(66.7)	2(33.3)				
• Forbidden	44(30.3)	101(69.7)				
• Not sure	22(40.5)	19(59.5)				
• I don't know	17(38.5)	25(61.5)				

Majority of early age smokers in this community agreed that they were smoking because of curiosity (69.6%), to fit in with friends (52.0%), peer influenced (65.7%) and their father was a smoker too. Other factors such as to show off, for fun, to look more grown up, to look "macho", poor academic performance, mass media as well as smoking mother and smoking siblings, these factors did not contribute for them to smoke as the percentage that disagreed with the factors was rather high (Table 6).

Table 6: Frequency of contributing factors towards early age smoking in community

Contributing factors	Frequency (%), n=102		
	Yes	No	Not sure
Curiosity	**71(69.6)**	19(18.6)	12(11.8)
Show off	17(16.7)	**70(68.6)**	15(14.7)
Fun	45(44.1)	**47(46.1)**	10(9.8)
Look more grown up	34(33.3)	**56(54.9)**	12(11.8)
Look "macho"	19(18.6)	**73(71.6)**	10(9.8)
Fit in with friends	**53(52.0)**	34(33.3)	15(14.7)
Peer influenced	**67(65.7)**	21(20.6)	14(13.7)
Poor academic performance	25(24.5)	**54(52.9)**	23(22.5)
Mass media	19(18.6)	**66(64.7)**	17(16.7)
Smoking father	**64(62.7)**	31(30.4)	7(6.9)
Smoking mother	4(3.9)	**91(89.2)**	7(6.9)
Smoking siblings	45(44.1)	**48(47.1)**	9(8.8)

Most of the respondents disagreed with most of the perceptions except for the perception of smoking influenced by smoking friends, in which more than 50% agreed with the perception (Table 7).

Table 7: Frequency of perception towards early age smoking in community (n=300)

Perceptions	Frequency (%)		
	Agree	Disagree	Do not know
Smoking increase concentration	39(13.0)	**195(65.0)**	66(22.0)
Smoking relaxing	66(22.0)	**176(58.7)**	58(19.3)
Smoking induce sleep	32(10.7)	**183(61.0)**	85(28.3)
Smoking give more energy	43(14.3)	**190(63.3)**	67(22.3)

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Smoking increase confident level	38(12.7)	**187(62.3)**	75(25.0)
Smokers more active	33(11.0)	**200(66.7)**	67(22.3)
Smoking help in losing weight	63(21.0)	**151(50.3)**	86(28.7)
Smoking make more sociable	86(28.7)	**146(48.7)**	68(22.7)
Smoker more attractive	62(20.7)	**181(60.3)**	57(19.0)
Smoking induce better grades in academic	13(4.3)	**234(78.0)**	53(17.7)
Smoking make friends easily	72(24.0)	**170(56.7)**	58(19.3)
Smoking good for health	30(10.0)	**229(76.3)**	41(13.7)
Smokers are tough	38(12.7)	**212(70.7)**	50(16.7)
Smokers are popular	38(12.7)	**206(68.7)**	56(18.7)
Smoking influenced by smoking friends	**155(51.7)**	96(32.0)	49(16.3)
Smoking influenced by smoking family	91(30.3)	**149(49.7)**	60(20.0)

Majority of both smokers and non-smokers disagreed with most of the perceptions. However, for the perception that smoking make more sociable, about 45% of smokers agreed while 52% of non-smokers disagreed with the perception. And regarding perception that smoking influenced by smoking friends, both smokers and non-smokers, majority of them agreed with the statement (Table 8).

Table 8: Differences of frequency of perception towards early age smoking between smokers and non-smokers

Perceptions	Frequency (%)					
	Smokers, n=102			Non-smokers, n=198		
	Agree	Disagree	Do not know	Agree	Disagree	Do not know
Smoking increase concentration	21(20.6)	**64(62.7)**	17(16.7)	18(9.1)	**131(66.2)**	49(24.7)
Smoking induce sleep						
Smoking give more energy	18(17.6)	**69(67.6)**	15(14.7)	14(7.1)	**114(57.6)**	70(35.4)
Smoking increase confident level	26(25.5)	**61(59.8)**	15(14.7)	17(8.6)	**129(65.2)**	52(26.3)
Smoking influenced by smoking family	18(17.6)	**68(66.7)**	16(15.7)	20(10.1)	**119(60.1)**	59(29.8)
Smokers more active	34(33.3)	**53(52.0)**	15(14.7)	57(28.8)	**96(48.5)**	45(22.7)
Smoking help in losing weight						
Smoking make more sociable	20(19.6)	**67(65.7)**	15(14.7)	13(6.6)	**133(67.2)**	52(26.3)
Smoker more attractive	30(29.4)	**55(53.9)**	17(16.7)	33(16.7)	**96(48.5)**	69(34.8)
Smoking induce better grades in academic	**46(45.1)**	43(42.2)	13(12.7)	40(20.2)	**103(52.0)**	55(27.8)
	24(23.5)	**64(62.7)**	14(13.7)	38(19.2)	**117(59.1)**	43(21.7)
Smoking relaxing	6(5.9)	**75(73.5)**	21(20.6)	7(3.5)	**159(80.3)**	32(16.2)
Smoking make friends easily						
Smoking good for health	44(43.1)	**46(45.1)**	12(11.8)	22(11.1)	**130(65.7)**	46(23.2)
Smokers are tough	36(35.3)	**51(50.0)**	15(14.7)	36(18.2)	**119(60.1)**	43(21.7)
Smokers are popular	15(14.7)	**71(69.6)**	16(15.7)	15(7.6)	**158(79.8)**	25(12.6)
Smoking influenced by smoking friends	19(18.6)	**71(69.6)**	12(11.8)	19(9.6)	**141(71.2)**	38(19.2)
	21(20.6)	**65(63.7)**	16(15.7)	17(8.6)	**141(71.2)**	40(20.2)
	70(68.6)	22(21.6)	10(9.8)	**85(42.9)**	74(37.4)	39(19.7)

There is a statistically significant association between perception of smoking makes more sociable and smoking status. Non-smokers has higher proportion of disagree towards the perception of smoking makes more sociable as compared to the smokers. Therefore, there is a statistically significant association between perception of influenced by smoking friends and smoking status. Smokers has higher proportion of agree towards the perception of smoking influenced by smoking friends as compared to the non-smokers (Table 9).

Table 9: perception of smoking makes more sociable and smoking status (n=300)

Variable	Smoking status	n	X^2 value	p-value

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	Smoker	Non-smoker			
Smoking makes more sociable					
Agree	46(45.1)	40(20.2)	86	22.613	**< 0.001**
Disagree	43(42.2)	103(52.0)	146		
Do not know	13(12.7)	55(27.8)	68		
Smoking influenced by smoking friends					
Agree	70(68.6)	85(42.9)	155	17.894	**< 0.001**
Disagree	22(21.6)	74(37.4)	96		
Do not know	10(9.8)	39(19.7)	49		

Statistical test chosen: Chi-squared test

Among of those socio-demographic factors, by using ANOVA, there were statistically significant difference between mean total score of perception with 1) educational status and 2) smoking category which the p-value ≤0.001 while by using correlation, there was statistically significant correlation between 3) age of respondent and perception score towards early age smoking with p-value less than 0.001. (Table 10).

Table 10: Summary of relationship between socio-demographic factor and perception score; relationship between smoking category and perception score

Variable	**n**	**Mean score (SD)**	**F-statistic (df)**		**p-value**
Educational status			8.124(4,295)		**<0.001***
1. No formal education	6	19.33(5.645)			
2. Primary education	99	**25.02(4.583)**			
3. Lower secondary	106	21.60(5.059)			
4. Higher secondary	64	21.59(5.673)			
5. Tertiary	25	21.72(5.038)			
Smoking category			6.677 (2,297)		**0.001***
1. Active smoker	70	20.71 (5.786)			
2. Ex-smoker	32	23.03 (5.900)			
3. Non-smoker	198	**23.34 (4.844)**			
Variables	**n**	**Mean (SD)**	**Mean difference (95% CI)**	**T-value**	**P-value**
Religion					
Muslim	244	22.95 (5.296)	1.357 (-0.180, 2.895)	1.737	0.083
Hindu	56	21.59 (5.176)			
Gender					
Male	180	22.38(5.328)	-0.789 (-2.015,0.437)	-1.266	0.206
Female	120	23.17(5.222)			
Ethnicity					
Malay	239	22.97(5.322)	1.385 (-0.103,2.873)	1.831	0.068
Indian	61	21.59(5.064)			
Live with mother only					
Yes	55	21.49(5.953)	-1.472 (-3.020,0.075)	-1.873	0.062
No	245	22.96(5.106)			

Live with father only Yes No	 10 290	 20.70(4.620) 22.76(5.307)	 -2.062 (-5.409,1.285)	 -1.213	 0.226
Live with others Yes No	 13 287	 24.08(5.575) 22.63(5.280)	 1.446 (-1.507,4.399)	 0.964	 0.336
Only mother is working Yes No	 50 250	 16.56(6.427) 16.28(5.773)	 0.284(-1.510,2.078)	 0.311	 0.756
Both parents are not working Yes No	 11 289	 18.09(7.595) 16.26(5.808)	 1.835 (-1.718,5.388)	 1.016	 0.310
Sibling is working Yes No	 35 265	 15.51(5.187) 16.43(5.963)	 -0.916 (-2.997,1.165)	 -0.866	 0.387
Self –working Yes No	 25 275	 15.64(6.224) 16.39(5.853)	 -0.745(-3.164, 1.673)	 -0.607	 0.545

As the statistical conclusion, the mean perception score differed significantly across the five education groups, **F (4, 295) = 8.124, p < 0.001**. Since the p-value <0.05, thus null hypothesis is rejected. Bonferroni post-hoc test indicates that **primary education [25.02(4.583)]** show significantly higher mean perception score **than lower secondary [21.60(5.059)], higher secondary [21.59(5.673)] and tertiary education [21.72(5.038)].** So, there is significant difference in mean perception score of early age smoking between different education level in which the primary education has higher mean perception score of early age smoking than lower secondary, higher secondary and tertiary education level. **Statistical test chosen**: One-way ANOVA. As the statistical conclusion, the mean perception score differed significantly across the three smoking groups, **F (2, 297) = 6.677, p = 0.001**. Since the p-value <0.05 thus null hypothesis is rejected. Bonferroni post-hoc test indicates that **non-smoker [23.34(4.844)]** show significantly higher mean perception score **than active smoker [20.71(5.736)].** So, there is significant difference in mean perception score of early age smoking between different smoking category in which the non-smoker has higher mean perception score of early age smoking than active smoker (Table 11).

Table 11: Relationship between Educational Status and Perception Score

Educational status	**n**	**Mean score (SD)**	**F-statistic (df)**	**p-value**
No formal education	6	19.33(5.645)	8.124(4,295)	<0.001
Primary education	99	**25.02(4.583)**		
Lower secondary	106	21.60(5.059)		
Higher secondary	64	21.59(5.673)		
Tertiary education	25	21.72(5.038)		
Smoking category	**n**	**Mean score (SD)**	**F-statistic (df)**	**p-value**
Active smoker	70	20.71 (5.786)	6.677 (2,297)	0.001
Ex-smoker	32	23.03 (5.900)		
Non-smoker	198	**23.34 (4.844)**		

Statistical test chosen: One-way ANOVA

DISCUSSION

Smoking is a major health concern in our country and many studies had been done in Malaysia to evaluate the factors that contribute to smoking and their perception towards smoking habit among adolescence (Petaling district, Negeri Sembilan and Kelantan)[6, 7, 11].The uniqueness of our study is that there is still no studies done that are focusing in an urban poor setting specifically. Our study has been conducted in PPR Kg Baru HICOM Shah Alam and most of the people living there are from a poor economic status family with the mean household income of RM1551 (about 500 USD). This is considered as 'Asnaf' group in which they are eligible to receive 'zakat' from Lembaga Zakat Malaysia.

There are total 300 number of respondents involve in our study. Their age ranges from 10 to 19 years old with the mean age of 14 and the mean age of them to start smoking is 11 years old.The prevalence of Malaysian male adolescent smoking was 30.7%[12]. Our study has foundthat among the early age group in PPR Kg Baru HICOM, the prevalence of smoking is 34% in which majority of the smokers are Malay, Muslim and male. This is quite a number and it is worrisome considering that 11 years old is still a very young age for one to involve in smoking habit and we must evaluate what are the factor that associate for them to start smoking in order for us to prevent the number of smoking prevalence from keep increasing.

Most of our respondents are Muslim (n=244) and the rest of them are Hindu (n=56). Among smokers, majority of them (n=94) are Muslim which constitute to 92.2%, while 7.8% of them (n=8) are Hindu.75.8% of non-smokers are Muslim (n=150), while 24.2% of them (n=48) are Hindu. Our finding was consistent with a study conducted by Universiti Putra Malaysia (UPM), in which they had found that majority of the smoker are Muslim compare to other religion[13].

Most of the respondents are male (n=180) while female constitute to (n=120) of total number of respondent. Among smokers, 87.3% (n=89) of them are male while 12.7% (n=13) are female. Among non-smokers, 46% (n=91) of them are male while 54% (n=107) are female. Our result has support a study done in United States that showed gender is relevant, as boys are more likely to smoke cigarettes than girls (14). Besides a study done in Negeri Sembilan which showed the prevalence of students who start smoking at 13 to 14 years of age in Negeri Sembilan is about 37.8% in which usually the prevalence of smoking among male students was higher than the female students[6].

By race, most of the respondents are Malays (n=138) and the rest of them are Indian. Among smokers 90.2% (n=92) are Malay while only 9.8% (n=10) of them are Indian. Among non-smokers 73.7% (n=147) are Malay, 25.3% (n=51) are Indian. According to GATS Malaysia 2011, by race/ethnicity, the prevalence of current tobacco users was highest in the 'other' group (31.4%). The prevalence of tobacco uses for the three main ethnicities which are Malays, Chinese and Indians were 25.1%, 16.1%, 21.4%respectively. We believe our prevalence is differ with GATS is because of the sampling techniques used and it is by chance that our study found that Malay has higher number of prevalence of smoking.

In addition, our study has found there is a significant association of the respondent employment status and smoking status. Most of them who had already working tend to smoke (60%) rather than those who did not work. A study done on 2001 found that being employed or seeking work was also associated with a higher likelihood of current smoking. This can be assumed that having their own income tends to cause them to smoke and this is where the term 'purchasing power' fit in.

We have also found a significant association between pray 5 times a day and smoking status in which this variable is designated for Muslim respondents (n=244) only in the community.11.7% (n=11) of smokers and 88.3% (n=83) of non-smokers pray five times a day and vice versa where 55.3% (n=83) of smokers and 44.7% (n=67) of non-smokers do not pray five times a day. This study is parallel to a study conducted in 2005 which indicated that those who prayed had significantly less smoking and alcohol use and had more favourable health-related behaviours[14].

Besides, we have found a significant association between only father is working with smoking status where 40.4% of respondents who has only father working beennon-smokers, while only 25.5% of them are smokers. There is no previous study found related to parent's employment and smoking status specifically,

however Suzanne and Linda state that higher levels of parental socioeconomic variables, such as education and social class, have often been found to be inversely related to smoking status in adolescents[15].

And lastly, we have found that there is a significant association between living arrangement and smoking status in which those who live with both parents are 50% less odd to not smoke compared to those who didn't live with both parents. Less parental smoking, stronger family bonding, strict family monitoring and rules are significantly lower risk of daily smoking. This can be concluded that if the bonding between family member is strong and the support system is strong, there is less likelihood of the children to smoke.

Next, we have evaluated the factors that contribute to smoking among early age group in PPR Kg Baru HICOM. In this study we list curiosity, to show off, for fun, to look more grown up, look 'macho', to fit in with friends, peer pressure, poor academic performance, influence from mass media and lastly family members are smoking as the contributing factors. We have found the factors that contribute to smoking are curiosity (69.6%), peer influence (65.7%), smoking father (62.7%) and to fit in with friends (52%).

This in line with previous study which stated that "children are more likely to model their own behaviour on actions of people they regard as worthy, like themselves, and models of their own sex"[14].

Peer influence is also believed to be a strong predictor of smoking initiation in most of studies[11, 16]. Furthermore, studies from Japan[17], Syria [18], Spain [19]and Saudi Arabia[20] have shown that smoking rates of students are related to having friends who smoke.

Overall, the level of perception towards early age smoking among community of PPR Kg Baru HICOM is good (55. 3%).This is reflected by majority of them disagree with the statement regarding perception and reflected as the number of frequency of disagrees for most of the statements have the highest rank.

Among all the questions about the perceptions, there were only two statements that were significant. First, either smoking makes one more sociable or second, either smoking is influenced by smoking friends. For smoking make more sociable, majority of the smokers (45.1 %) agree that one start to smoke in order to make them appear as more sociable, while majority of non-smoker (52%)disagree to that statement. We may relate this when we reflect to their environmental area and peers influence. However, a study done in 2003 done by N.A.Watson stated that both smokers and non-smokers, suggest that smoking is socially acceptable by young adult[21]. It is obvious that this study has been done in other country that has their own beliefs and culture, different with our country which majority are Muslims with our beliefs that smoking is actually haram and harmful to health.

For the second issue, 68.6% of the smokers and 42.9% non-smokers agree that smoking may be influenced by smoking friends. This trend is worrisome as this result showed that how important peers influence to one in making decision and thinking rationale. Our respondent age group is the age group in which they spend most time with friends rather than with families.

As for the association between perceptions of smoking makes more sociable and smoking status, we can see that from the data, there is a significant association between perceptions of smoking makes more sociable and smoking status. 46 (45.1 %) who agree that smoking makes more sociable are smokers while 103 (52%) respondent who disagree are non-smokers.

For the association between perception of smoking influenced by smoking friends and smoking status There is a significant association between perception of smoking influenced by smoking friends and smoking status Both smoker (70 respondents) and non-smoker (85 respondents) agree with the statement smoking can be influenced by friends. A study in Thailand which found that adolescents with most or all friends who smoked were more than twenty times likely to report smoking compared to those who had non-smoking friends support thus point of view[22].

When we reviewed the relationship between socio-demographic factor and perception score towards early age smoking, we could see that among the socio-demographic factor, the significant different was seen between educational status and perception towards early age smoking. From the problem conclusion before, there is significant difference in mean perception score of early age smoking between different education level

in which the primary education has higher mean perception score of early age smoking than lower secondary, higher secondary and tertiary education level.

A study done by Pocellato in 2002 reflects that primary school children has higher score of perception towards smoking compared to secondary school children[23]and this may be due to the children at primary school, they still did not have much peers influence when compared to other school age group. if we think for a second, did education affect the style of thinking? We can say that we agree with the question as this was supported by research done by Antonanzas in 2000, stated that mean years of schooling reflect the level of the respondent's education, where education potentially could affect knowledge and perception in understanding the smoking risks[24].

Another study done by Ma in 2003, targeted on respondents with mean age of 41. They highlight how different educational level (primary, secondary, tertiary) affect their perception towards smoking[25]. These results also show significant difference in educational status and smoking perception. As supported by those studies, we can say that having higher educational status, one can think more critically and being able to be rationale in every action.

When we find out the correlation between age and perception score towards early age smoking, we realized that age is moderately and negatively correlated with perception score towards warning labels in the community, thus become an important predictor of perception score. A study done by F.O. Omokhodion in 2007, targeted towards secondary school students in Nigeria, in which 57% of the students has good perception toward smoking[10].

Although another factor (religion, gender, ethnic *etc*) have no significant different towards perception of smoking, there are still some study interestingly found that the results are significant. For example, a research in 2003 that was conducted among Asian American, targeted on 4 different ethnic (Korean, Vietnamese, Chinese and Cambodian) to study on their perception towards smoking[26]. In this study, Korean showed the highest score and the least was Vietnamese. An article published by Italian Journal in 2010 based on research conducted among Muslims in Malaysia, majority (79%) believes that their religion discourages smoking and most of them have good perception towards smoking[27].

By comparing this, we can say that we may lack our attention towards certain community in delivering the knowledge of smoking itself. Nevertheless, other factors such as father smoking, environmental and economic factors can influence this situation and should also be considered.

CONCLUSION

From this study, it can be concluded the prevalence of smoking is 34% among the early age group in PPR KampungBaru HICOM in which most of the smokers are Malay, Muslim and male. We found that the topmost factors that contribute to smoking were curiosity, peer influenced as well as to fit in with friends. In addition, overall perception towards early age smoking of community in PPR Kampung Baru HICOM is good (53.3%). Thus, the recommendation and strategy can be developed to further improve the community perceptions towards early age smoking which will shed a new light in tackling this issue. In addition, we found that there was significant association between educational status and perception score towards early age smoking. Besides that, there was also significant difference in mean perception score of early age smoking between different smoking category in which the non-smoker has higher mean perception score of early age smoking than ex-smoker and active smoker. Meanwhile, a negative correlation was found between age and perception score towards early age smoking. Based on our study, we can also conclude that there is a significant association between perceptions of smoking makes more sociable and smoking status. It is hope that the study findings can be used as a guide for future and implementation to intervene this current and major issue among adolescent.

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