ORIGINAL ARTICLE

Smoking Behaviour and Quality of Life Among Adults in Puncak Alam: A Cross-sectional Study

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ABSTRACT

Introduction: Smoking affects health-related quality of life based on people's self-report evaluation of their physical ability, mental function, and overall condition. This study was conducted to determine smoking behaviours and the quality of life among adults in Puncak Alam. **Materials and methods:** A quantitative cross-sectional study was conducted among adults in Puncak Alam. The questionnaire has three parts: sociodemographic, smoking behaviour and quality of life. **Results:** A total of 296 respondents participated in this study. Smoking behaviour results showed most of the respondents were current smokers (51.0%), light smokers (66.6%) and no nicotine dependence (47.6%). The majority of respondents reported good quality of life in mobility (85.5%), self-care (93.6%), usual activities (80.4%), pain or discomfort (65.9%), and anxiety or depression (80.7%). There was a significant association between smoking behaviour (smoking status, smoking intensity, level of nicotine dependence) and quality of life where p=<0.05. **Conclusion:** There was an association between sociodemographic characteristics (age, gender, marital status, monthly household income, education level, BMI, chronic disease) with smoking status, smoking intensity and nicotine dependence, p=<0.05. Future research should consider the period of quitting smoking among past smokers to identify accurate findings.
Malaysian Journal of Medicine and Health Sciences (2026) 22(1): 1-9. doi:10.47836/mjmhs.v22i1.1364

Keywords: Nicotine dependence, Smoking behaviour, Smoking intensity, Smoking status, Quality of life

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INTRODUCTION

Smoking was known as a harmful behaviour that caused less productivity among individuals due to morbidity due to exposure to tobacco (1). Smoking behaviour dramatically impacts an individual's quality of life in terms of the individual's mobility, pain, self-care, usual activities and depression (2). The majority of current smokers began smoking during their teenage years, making adolescents the primary age group that initiates smoking (3). As a result, many smokers started using tobacco before reaching adulthood and continued smoking into their mid-20s (4).

The smoker group believes smoking is one of the solutions to relieve stress and enhance relaxation (5). However, the compilation of evidence proved that the quality of life among non-smokers or former smokers was much better than the ever-smoked group of people (5). It can be due to smokers with lifetime smoking could be at the risk of developing depression problems (4). Therefore, a group that never smoked presently has a better health-related quality of life with fewer symptoms of anxiety and depression (4). There was evidence regarding smoking behaviour that showed a negative impact in terms of mortality rate and long periods of hospital stay, which affects hospitalization costs (1). However, the relationship between smoking behaviour and the quality of life was rarely documented (2). Tobacco consumption among young adults increases due to stress problems, peer pressure, social acceptance, class history of smoking, lower educational level of parents, and the desire to attain a higher social class (3). These unintentionally affected the smoking behaviour patterns (3). Thus, this study was done to determine the smoking behaviours and the quality of life among adults in Puncak Alam.

MATERIALS AND METHODS

Study design and population.

The study design was implemented in a cross-sectional study conducted among adults in the Puncak Alam

community.

Samples

The sampling method used in this study was convenience sampling. The population size (N) is 5,152 according to the population data on the Kuala Selangor Website in 2019 (Portal Rasmi PDT Kuala Selangor Demografi Penduduk Daerah Kuala Selangor, 2019). A sample size calculator was used to calculate the sample size, Raosoft Software, and the recommended sample size (n) is 358. In achieving the accuracy of the data, the inclusion criteria were either smoker or non-smoker adults living in Puncak Alam and above 18 years old. Besides, the respondents could access social networks and answer the questionnaire.

Students from Universiti Teknologi MARA (UiTM) Puncak Alam Campus were excluded from this study, as they are not considered part of the local Puncak Alam community and are present only for academic purposes. Additionally, respondents with any mental health issues were also excluded.

Instruments

The self-administered questionnaire was used in this study. The questionnaire was in Malay version and divided into parts: Part A, Part B, and Part C.

Part A (Socio-Demographic Characteristics)

Part A identified the respondents' sociodemographic characteristics: age, gender, marital status, educational level, monthly household income, physical activity, body mass index (BMI), and chronic disease.

Part B (Smoking Behaviours)

The smoking behaviour questionnaire consists of three categories, which are smoking status, smoking intensity, and nicotine dependence (2). The first section of the smoking behaviour questionnaire was smoking status, which has one question regarding the status of smoking with three choices such as never smoker (Never smoked/ smoked less than 100 pieces of cigarettes in their lifetime), past smoker (Had smoked regularly or occasionally in the past) or current smoker (Smoke at least one piece of cigarette per day). Meanwhile, the second section is smoking intensity for further classification of current smoker. This section has one question with three choices, such as heavy, moderate, or light smoker. The smoking intensity was determined by the number of cigarettes per day for a light smoker (0 - 9 pieces), a moderate smoker (10 - 19 pieces), and a heavy smoker (20 pieces and more). The third section is nicotine dependence, which is classified based on the Fagerstrom test, which consists of six questions with multiple choices. The total score determines the level of dependence, either low (1 - 2), moderate (3 - 7), high (8 and more), or no (never smoker & past smoker). In addition, the never smoker and past smokers are considered not nicotine dependence. The questionnaire demonstrates strong internal consistency reliability with a Kuder-Richardson Formula 20 (KR-20) coefficient of 0.955, indicating high validity and reliability of the results obtained.

Part C (The Quality of Life)

The last part is Part C, which was the quality of life questionnaire (HRQoL) (EQ-5D-5L) with five dimension questions, including the rate of mobility, self-care, usual activities, pain or discomfort, and anxiety or depression (2). The response levels were no problem, slight problem, moderate problem, severe problem, and extreme problem. In this study, the validity of the EQ-5D-5L was 0.840.

Validity and reliability

The questionnaire used in this study was adapted from Rezaei et al. The translation process of the questionnaire was done from English to Malay language and then to English again. The final questionnaire was in Malay language and the translation was checked by the expert. Face validity was done among five respondents to check the clarity of the questions. A pilot study was done after the ethical approval. Ten percent of the sample size was chosen for pilot study which is 36 respondents. The Cronbach alpha for quality of life was 0.840 and Kuder-Richardson Formula 20 (KR-20) coefficient for smoking behaviours was 0.955. Therefore, the questionnaire was valid and reliable for data distribution.

Data Collection

The data was collected after the approval from the UiTM Research Ethics Committee (FERC/FSK/MR/2022/0343). This study was conducted entirely online. The study poster has been shared in the Facebook community, and individuals who wish to participate can click on the provided link. Data collection started from January until March 2023. The respondents had been informed about the details and characteristics of the study before asking for the respondent's agreement. The anonymous response to the survey was entirely voluntary to prevent bias. The respondents had been reminded to check the questionnaire for their consent to participate. All the respondents' details were obtained by filling in the consent provided before answering the questionnaire, whether they agreed or disagreed with taking part in the study.

Statistical Analysis

Descriptive analysis (frequency and percentage) was performed on all variables in this study: sociodemographic characteristics, smoking behaviour and the quality of life. The relationship between variables was measured using the chi-square or Fisher exact test. The data was analyzed using Statistical Package for the Social Sciences (SPSS) version 26, with statistical significance defined by $p\text{-value} < 0.05$.

Ethical Clearance

This study was approved by the UiTM Ethics Committee

(FERC/FSK/MR/2022/0343). Furthermore, all the respondents had been informed about the details and characteristics of the study before asking for the respondent's agreement. Thus, the consent form was provided, in which the participants had been asked whether they agree or disagree to participate in the study. Other than that, the participants had been informed that their personal information and answers were confidential.

RESULTS

Socio-Demographic Characteristics

The results of the sociodemographic characteristics of this study's respondents are shown in Table I. Most respondents were 18 to 44 years old (68.2%). Moreover, most of the respondents were among males (78.7%) and married (54.1%).

Table I: Socio-demographic characteristics among adults in Puncak Alam

Variables	Frequency (n)	Percentage (%)
Age groups		
18 - 44 years	202	68.2
> 44 years	94	31.8
Gender		
Male	233	78.7
Female	63	21.3
Marital status		
Never married	124	41.9
Married	160	54.1
Divorced and widowed	12	4.1
Monthly household income per capita (in Malaysia)		
Low (< RM 5,000)	181	61.1
Middle (RM 5,000 - RM 11,000)	105	35.5
High (> RM 11,000)	10	3.4
Education level		
Illiterate	1	0.3
Primary	3	1.0
Secondary	79	26.7
University	213	72.0
Physical activity		
Active	243	82.1
Moderately active	52	17.6
Inactive	1	0.3
Body mass index (BMI)		
Normal	258	87.2
Overweight/obese	25	8.4
Underweight	13	4.4
Chronic disease (exp: heart disease, cancer, diabetes and the others)		
Yes	84	28.4
No	212	71.6

Smoking Behaviours

The results of smoking behaviour among adults in Puncak Alam are shown in Table II. The results showed half of the respondents were current smokers (51.0%). In the smoking intensity category, more than half of the current smokers were light smokers (53.0%). Lastly, based on the level of nicotine dependence, respondents with no nicotine dependence recorded the highest percentage, with 47.6%.

Table II: Smoking behaviours among adults in Puncak Alam

Variables	Frequency (n)	Percentage (%)
Smoking status		
Never smoker	104	35.1
Past smoker	41	13.9
Current smoker	151	51.0
Smoking intensity		
Heavy smoker	6	4.0
Moderate smoker	65	43.0
Light smoker	80	53.0
Level of dependent on nicotine		
No dependence (non-smoker)	141	47.6
Low dependence	47	15.9
Moderate dependence	107	36.1
High dependence	1	0.3

The Quality of Life Among Adults in Puncak Alam

Table III shows the quality of life among adults in Puncak Alam. Almost more than half of the respondents rated their quality of life as "no problem" in all five domains. A minority of respondents experienced moderate problems in pain/discomfort (7.1%).

Table III: Frequency and percentage of quality of life among adults in Puncak Alam.

Variables	Frequency (%)				
	No problem	Slight problem	Moderate problem	Severe problem	Extreme problem
(EQ-5D-5L) Mobility	253 (85.5)	39 (13.2)	3 (1.0)	1 (0.3)	0 (0.00)
Self-care	277 (93.6)	16 (5.4)	2 (0.7)	1 (0.3)	0 (0.00)
Usual Activities	238 (80.4)	46 (15.5)	10 (3.4)	2 (0.7)	0 (0.00)
Pain/discomfort	195 (65.9)	80 (27.0)	21 (7.1)	0 (0.00)	0 (0.00)
Anxiety/depression	239 (80.7)	49 (16.6)	8 (2.7)	0 (0.00)	0 (0.00)

The relationship between smoking behaviours and the quality of life among adults in Puncak Alam

The result showed that there was a significant relationship between smoking status and all five domains in quality of life (mobility, usual activities, self-care, pain or discomfort, and anxiety or depression) with $p = < 0.001$.

Table IV: The association between smoking status and quality of life among adults in Puncak Alam.

Variables		Smoking Status (n)(%)			X (2) (df)	P - Value
	Level of problem	Never smoker	Past smoker	Current smoker		
Quality of Life Mobility	No	99 (33.4)	24 (8.1)	130 (43.9)		<0.001 [a]
	Slight	5 (1.7)	17 (5.7)	17 (5.7)		
	Moderate	0 (0.00)	0 (0.00)	3 (1.0)		
	Severe	0 (0.00)	0 (0.00)	1 (0.3)		
	Extreme	0 (0.00)	0 (0.00)	0 (0.00)		
Self-care	No	102 (34.5)	35 (11.8)	140 (47.3)		0.036 [a]
	Slight	2 (0.7)	6 (2.0)	8 (2.7)		
	Moderate	0 (0.00)	0 (0.00)	2 (0.7)		
	Severe	0 (0.00)	0 (0.00)	1 (0.3)		
	Extreme	0 (0.00)	0 (0.00)	0 (0.00)		
Usual activities	No	100 (33.8)	27 (9.1)	111 (37.5)		<0.001 [a]
	Slight	4 (1.4)	13 (4.4)	29 (9.8)		
	Moderate	0 (0.00)	1 (0.3)	9 (3.0)		
	Severe	0 (0.00)	0 (0.00)	2 (0.7)		
	Extreme	0 (0.00)	0 (0.00)	0 (0.00)		
Pain/ Discomfort	No	97 (32.8)	7 (2.4)	91 (30.7)	(92.61) 4	<0.001 [b]
	Slight	7 (2.4)	22 (7.4)	51 (17.2)		
	Moderate	0 (0.00)	12 (4.1)	9 (3.0)		
	Severe	0 (0.00)	0 (0.00)	0 (0.00)		
	Extreme	0 (0.00)	0 (0.00)	0 (0.00)		
Anxiety/ Depression	No	98 (33.1)	32 (10.8)	109 (36.8)		<0.001 [a]
	Slight	6 (2.0)	9 (3.0)	34 (11.5)		
	Moderate	0 (0.00)	0 (0.00)	8 (2.7)		
	Severe	0 (0.00)	0 (0.00)	0 (0.00)		
	Extreme	0 (0.00)	0 (0.00)	0 (0.00)		

*Fisher exact test [a]
*Chi-Square test [b]

The association between socio-demographic characteristics and smoking behaviours among adults in Puncak Alam

Table V shows the association between sociodemographic characteristics and smoking status among adults in Puncak Alam. There was a significant association between sociodemographic factors and smoking status since p = < 0.05.

Table V: The association between socio-demographic characteristics and smoking status among adults in Puncak Alam

Variables Demographics	Smoking status (n)(%)			X^2(df)	P - Value
	Never smoker	Past smoker	Current smoker		
Age groups					
18 - 44 years	80 (27)	8 (2.7)	114 (38.5)	133.7 (2)	<0.001 [b]
> 44 years	24 (8.1)	33 (11.1)	37 (12.5)		
Gender					
Male	43 (14.5)	41 (13.9)	149 (50.3)	52.2 (2)	<0.001 [b]
Female	61 (20.6)	0 (0.00)	2 (0.7)		
Marital status					
Never married	66 (22.3)	2 (0.7)	56 (18.9)		<0.001 [a]
Married	35 (11.8)	39 (13.2)	86 (29.1)		
Divorced and widowed	3 (1.0)	0 (0.00)	9 (3.0)		
Monthly household income per capita (in Malaysia)					
Low (< RM 5,000)	76 (25.7)	11 (3.7)	94 (31.8)		<0.001 [a]
Middle (RM 5,000 - RM 11,000)	24 (8.1)	25 (8.4)	56 (18.9)		
High (> RM 11,000)	4 (1.4)	5 (1.7)	1 (0.3)		
Education level					
Illiterate	1 (0.3)	0 (0.00)	0 (0.00)		0.002 [a]
Primary	0 (0.00)	0 (0.00)	3 (1.0)		
Secondary	18 (6.1)	7 (2.4)	54 (18.2)		
University	85 (28.7)	34 (11.5)	94 (31.8)		

CONTINUE

Table V: The association between socio-demographic characteristics and smoking status among adults in Puncak Alam (CONT.)

Variables Demographics	Smoking status (n)(%)			X^2(df)	P - Value
	Never smoker	Past smoker	Current smoker		
Physical activity					
Active	94 (31.8)	31 (10.5)	118 (39.9)		0.030 [a]
Moderately active	10 (3.4)	10 (3.4)	32 (10.8)		
Inactive	0 (0.00)	0 (0.00)	1 (0.3)		
Body mass index (BMI)					
Normal	85 (28.7)	40 (13.5)	133 (44.9)		0.016 [a]
Overweight/obese	10 (3.4)	0 (0.00)	15 (5.1)		
Underweight	9 (3.0)	1 (0.3)	3 (1.0)		
Chronic disease					
Yes	9 (3)	28 (9.5)	47 (15.9)	52.6 (2)	<0.001 [b]
No	95 (32.1)	13 (4.4)	104 (35.1)		

*Fisher exact test [a]
*Chi-Square test [b]

Table VI shows the association between sociodemographic factors and smoking intensity among current smokers in Puncak Alam. The results show a significant association between the age groups, gender, marital status, monthly income, education level, BMI, and chronic disease with smoking intensity where the p = < 0.05. However, physical activity showed no significant association with smoking intensity since the p = 0.057.

Table VI: The association between socio-demographic characteristics and smoking intensity among current smoker in Puncak Alam.

Variables Demographics	Smoking Intensity (n) (%)			X^2 (df)	P-Value
	Light smoker	Moderate smoker	Heavy smoker		
Age groups					
18 - 44 years	64 (42.4)	46 (30.5)	4 (2.6)	15.2 (2)	<0.001 [b]
> 44 years	16 (10.6)	19 (12.6)	2 (1.3)		
Gender					
Male	78 (51.7)	65 (43.0)	6 (4.0)	40.2 (2)	<0.001 [b]
Female	2 (1.3)	0 (0.00)	0 (0.00)		
Marital status					
Never married	43 (28.5)	13 (8.6)	0 (0.00)		<0.001 [a]
Married	35 (23.2)	46 (30.5)	5 (3.3)		
Divorced and widowed	2 (1.3)	6 (4.0)	1 (0.7)		
Monthly household income per capita (in Malaysia)					
Low (< RM 5,000)	56 (37.1)	37 (24.5)	1 (0.7)		<0.001 [a]
Middle (RM 5,000 - RM 11,000)	24 (15.9)	28 (18.5)	4 (2.6)		
High (> RM 11,000)	0 (0.00)	0 (0.00)	1 (0.7)		
Education level					
Illiterate	0 (0.00)	0 (0.00)	0 (0.00)		0.003 [a]
Primary	0 (0.00)	3 (2.0)	0 (0.00)		
Secondary	22 (14.6)	31 (20.5)	1 (0.7)		
University	58 (38.4)	31 (20.5)	5 (3.3)		
Physical activity					
Active	62 (41.1)	54 (35.8)	2 (1.3)		0.057 [a]
Moderately active	18 (11.9)	11 (7.3)	3 (2.0)		
Inactive	0 (0.00)	00 (0.00)	1 (0.7)		
Body mass index (BMI)					
Normal	75 (49.7)	58 (38.4)	0 (0.00)		0.001 [a]
Overweight/obese	3 (2.0)	6 (4.0)	6 (4.0)		
Underweight	2 (1.3)	1 (0.7)	0 (0.00)		
Chronic disease					
Yes	20 (13.2)	22 (14.6)	5 (3.3)		<0.001 [a]
No	60 (39.7)	43 (28.5)	1 (0.7)		

*Fisher exact test [a]
*Chi-Square test [b]

Table VII shows the results of an association between sociodemographic factors and level of nicotine dependence. There is a significant association between the sociodemographic characteristics (age, gender, marital status, monthly income, education level, physical activity, body mass index (BMI), chronic disease) with the level of nicotine dependence with p = < 0.05.

Table VII: The association between socio-demographic characteristics and level of nicotine dependence among adults in Puncak Alam.

Variables Demographic	Level of nicotine dependence (n) (%)				P-value
	No dependence (non-smoker)	Low dependence	Moderate dependence	High dependence	
Age groups					
18 - 44 years	86 (29.1)	43 (14.5)	73 (24.7)	0 (0.00)	<0.001
> 44 years	55 (18.6)	4 (1.4)	34 (11.5)	1 (0.3)	
Gender					
Male	80 (27.0)	47 (15.9)	105 (35.5)	1 (0.3)	<0.001
Female	61 (20.6)	0 (0.00)	2 (0.7)	0 (0.00)	
Marital status					
Never married	68 (23)	31 (10.5)	25 (8.4)	0 (0.00)	
Married	70 (23.6)	15 (5.1)	74 (25.0)	1 (0.3)	<0.001
Divorced and widowed	3 (1.0)	1 (0.3)	8 (2.7)	0 (0.00)	
Monthly household income per capita (in Malaysia)					
Low (< RM 5,000)	86 (29.1)	37 (12.5)	57 (19.3)	1 (0.3)	0.004
Middle (RM 5,000 - RM 11,000)	46 (15.5)	10 (3.4)	49 (16.6)	0 (0.00)	
High (> RM 11,000)	9 (3.0)	0 (0.00)	1 (0.3)	0 (0.00)	
Education level					
Illiterate	1 (0.3)	0 (0.00)	0 (0.00)	0 (0.00)	
Primary	0 (0.00)	0 (0.00)	3 (1.0)	0 (0.00)	0.001
Secondary	24 (8.1)	16 (5.4)	39 (13.2)	0 (0.00)	
University	116 (39.2)	31 (10.5)	65 (22.0)	1 (0.3)	
Physical activity					
Active	123 (41.6)	44 (14.9)	76 (25.7)	0 (0.00)	
Moderately active	18 (6.1)	3 (1.0)	30 (10.1)	1 (0.3)	<0.001
Inactive	0 (0.00)	0 (0.00)	1 (0.3)	0 (0.00)	
Body mass index (BMI)					
Normal	122 (41.2)	46 (15.5)	90 (30.4)	0 (0.00)	
Overweight/obese	10 (3.4)	0 (0.00)	14 (4.7)	1 (0.3)	0.007
Underweight	9 (3.0)	1 (0.3)	3 (1.0)	0 (0.00)	
Chronic disease					
Yes	35 (11.8)	4 (1.4)	44 (14.9)	1 (0.3)	<0.001
No	106 (35.8)	43 (14.5)	63 (21.3)	0 (0.00)	

*Fisher exact test

DISCUSSION

The smoking behaviours among adults in Puncak Alam

In this study, the smoking behaviour questions were divided into three sections, which are smoking status, smoking intensity and the level of nicotine dependence. Based on the findings from smoking status, most of the respondents were recorded as current smokers (51%). This can be due to respondents with lower incomes often face higher levels of stress due to financial instability, employment insecurity, and other socio-economic pressures (5). Smoking is sometimes used as a coping mechanism for dealing with stress and anxiety. Most of them believed smoking could release tension and reduce stress levels since cigarettes contain substances that could decrease vitality and minimize muscle tension (5). Moreover, from the smoking intensity section, the results showed light smokers recorded the highest number of respondents (53.0%) among current smokers. This can be light smoking might be perceived as less harmful, leading some individuals to continue smoking at this level rather than quitting altogether.

Furthermore, the results of the level of nicotine dependence show that there is no nicotine dependence (47.6%). It's quite surprising to see that such a high percentage of individuals are reported as having no nicotine dependence, especially considering that nicotine is a highly addictive substance found in tobacco products like cigarettes. The majority of respondents were light smokers, who typically have a lower level of nicotine dependence compared to heavy smokers. This group may not experience the same withdrawal symptoms or cravings associated with higher levels of smoking. Whereas other study report that an unexpected finding where the groups of older adults with high levels of nicotine dependence were more likely to be exposed to morbidity and disability (6).

The quality of life among adults in Puncak Alam

This study found that almost half of respondents rated their quality of life as "no problem". This can be due to some smokers underestimating the negative consequences of smoking on their health and quality of life due to cognitive biases or denial. They may ignore the health risks associated with smoking, leading them to rate their quality of life as "no problem.". Since smoking takes several years to affect the user with chronic disease, most smokers may enjoy consuming it early. However, this study was found in contrast with a previous study organized in developed countries like England and the United States of America, that recorded current smokers had a significant reduction in physical Health-related quality of life (HRQoL) compared to never smokers that led to better physical HRQoL (7). Cigarettes only contain nicotine and other harmful substances that could worsen

the health of someone. Therefore, the current smokers have worse health and low quality of life. Most former smokers had quit smoking and reported the lowest quality of life regarding mobility, daily activities, pain, and anxiety (8). In our study, we also found that 5.7% of former smokers experienced slight mobility issues. Moreover, the most common reason for past smokers to quit smoking was due to poor health status, worse quality of life and the fact of their being diagnosed with smoking-related diseases (9).

Furthermore, individuals who have smoked in the past exhibited significantly higher rates of healthcare utilization compared to those who have never smoked (1). However, in our study, some former smokers reported experiencing fewer signs of anxiety, depression, and pain or discomfort, which may be attributed to effective treatment and ongoing follow-up care. This trend is likely attributable to the elevated risk of developing multiple health conditions later in life among current smokers, leading to a greater need for healthcare services to manage their health issues. Besides, smokers are more likely to drink alcohol, be inactive in usual activities, have pain and consume an unhealthy diet (2). Several of the smokers knew that smoking could impact their health but still continued their smoking habits because of the addiction and had difficulty stopping smoking. They have already established timelines for quitting smoking as they become older or upon been diagnosed with serious illnesses such as cardiovascular and respiratory diseases, along with certain types of cancer (6).

Moreover, the past smoker also experienced poor quality of life, like sleep disturbance and mood instability from the nicotine withdrawal symptoms at the early phase of smoking cessation (8). Sleep disturbance and mood instability resulting from nicotine withdrawal symptoms can indeed be considered as components of poor quality of life. In addition, individuals who smoked were highly associated with premature mortality, worse well-being and physical health such as pain/discomfort and increased anxiety (1). Thus, stopping smoking was not an easy decision. Still, it is better to stop early or never be involved in that smoking behaviour to avoid getting a worse quality of life and low health status in the future.

The association between smoking behaviours and the quality of life among adults in Puncak Alam

The findings from the study accept the alternative hypothesis that there is a significant association between smoking behaviour and the quality of life since the p = <0.05. This study found that current smokers recorded the highest respondents with high levels of quality of life for mobility, self-care, usual activities, and anxiety or depression compared to never and past smokers. Similar with other studies who reported that high scores in quality of life were recorded among current smokers compared to past and never smoked respondents (8). Therefore, the researchers speculated that smokers categorized themselves as healthy people with a good quality of life (8). Nevertheless, several studies concluded current smokers had poor quality of life compared to never and past smokers, which showed inverse results to our study (4). However, the possible reason that could affect the results was the majority of current smokers turned out to be light smokers with less than ten cigarettes per day (4). It's possible that current smokers who participated in the study represent a subgroup of individuals who are healthier and have fewer comorbidities compared to never and past smokers. This bias could skew the results, making it appear that current smokers have higher quality of life scores in certain domains.

Furthermore, there were several studies stating that no relationship was found between smoking and depression (10). However, current smokers had more prevalence of anxiety or depression compared to never and past smokers (2). Even more, smoking could be worsening depression and anxiety problems (10). Furthermore, in this study, past smokers recorded the lowest percentage of having anxiety or depression problems, which was 10.8%. This showed an improvement among past smokers in terms of their mental health and quality of life. In accordance, there was a correlation between smoking cessation and the reduction of mental problems such as stress, depression and anxiety (2).

Moreover, a previous study stated that the cessation duration might positively impact the individual's psychological health (6). Besides, in our research, past smokers were recorded to have moderate problems in terms of pain or discomfort, which are higher than never and current smokers. According to the findings, it can be concluded that the past smokers decided to initiate smoking cessation since they had poor health status due to previous smoking behaviour. This can be supported by the earlier study, which revealed the reason for past smokers taking action to quit smoke might be due to the diagnosis that was caused by a history of smoking activity (8).

The association between socio-demographic characteristics and smoking behaviours among adults in Puncak Alam

The findings from the study accept the alternative hypothesis that there is a significant association between sociodemographic and smoking behaviour since the p=<0.05. The study demonstrated an association between sociodemographic characteristics and smoking status among adults in Puncak Alam. The high number of males (50.3%) and the age group of 18 to 44 years old (38.5) was seen among current smokers. Current smoking status remains higher among males than females (11). The possible reasons could be that social acceptability regarding smoking behaviour was different between males and females. The females who smoked were considered undesirable in society, and most males believed that smoking could make young men look

more attractive (11).

Furthermore, most were married (29.1%) and from university backgrounds (31.8%). The current smoker who is married usually reported difficulty in unresolved conflict with their spouse, disagreement with partner decisions and insecurity within partners (12). Therefore, it might cause psychological distress, which often triggers smoking as a coping action. Next, educational levels were the main sociodemographic factors that affected someone's behaviour in life. People with a low academic level tend to be involved in smoking behaviour because they are less exposed to education regarding smoking effects throughout their lifetime (13). However, people with a university background might smoke mainly as a social engagement tool and to relieve negative emotions (11).

In addition, the data indicates everyday monthly household income per capita was low (<RM5,000) among current smokers. Although the influence of income level on smoking behaviour was expected, occupation significantly has an association with smoking behaviour (14). Specific individuals may cope with their job-related stress by smoking (14). Thus, job stress may explain the potential effects of income on smoking. This study found that 39.9% of respondents were active during their daily activity and maintained a normal BMI (44.9%). Several studies have pointed out that there are gender differences in smoking behaviour and physical activity among adolescents (13). Most females who smoke in the community seem less active and tired (13). More specifically, in particular studies, females had lower smoking rates and physical activity compared to males (13). Lastly, most of the current smokers complained of no chronic disease (35.1%) because most of the current smokers in the study may have been relatively young, less than 44 years old, and therefore at a stage where the onset of chronic diseases is less common.

Moreover, there was an association between sociodemographic factors and smoking intensity among current smokers in Puncak Alam. Based on marital status, married people recorded the highest number of moderate smokers (30.5%). The smoker who married usually develops some unresolved issues within spouses, which leads to a rise in stress levels that often triggers cigarette smoking to release tension (12). Moreover, the majority of smokers are among respondents with a high education level, which is a university, where light smokers (38.4%), moderate smokers (20.5%) and heavy smokers (3.3%). Due to low incomes, university students were reported to smoke a few pieces of cigarettes to release stress levels (14). Our study found that heavy smokers have chronic disease (3.3%) as cigarettes contain nicotine and other harmful substances, which puts them at a high possibility of developing chronic diseases after prolonged smoking (8).

The findings indicate a association between sociodemographic factors and the level of nicotine dependence. Notably, the age group of 18 to 44 years old recorded a lower prevalence of nicotine dependence (29.1%). This could be attributed to the relatively young age of individuals in this group. Nicotine dependence tends to develop over time with prolonged smoking exposure, and younger smokers may not have yet reached a level of dependence comparable to older individuals who have smoked for a longer duration. The older generation's connection to smoking is significant, as many smokers initiated the habit during adolescence (2). Over time, they developed a high dependence on nicotine, leading to prolonged smoking habits that proved challenging to quit, often resulting in adverse health outcomes and eventual mortality. Most of the respondents with a middle-income monthly household had a moderate level of nicotine dependence (16.6%). In general, smokers with low socioeconomic status or a low educational level are prone to high dependence on nicotine because they may be unaware of nicotine harm and lack knowledge and health maintenance (15). Concurrently, government workers showed high levels of nicotine dependence caused by daily work stress, especially in specific periods (15). The respondents with a university education level were recorded as the highest with no nicotine dependents (39.2%). Some studies have shown that people with high education levels were more aware of smoking impacts and smoking disease-related, and they were avoiding that with knowledge and perception for their future lives (14).

CONCLUSION

In this study, males were more likely to be interested in participating in this study compared to females, and half of the respondents were current smokers. However, respondents with no chronic disease recorded a higher percentage than those with chronic disease. This became more unpredictable when the quality of life among current smokers was more elevated than in past smokers. Unfortunately, the researcher had mentioned the possible reasons, such as the current smokers were young, and the respondents were not yet experiencing any health issues. Other than that, the smoking intensity factor where the light smokers might have a delayed process of disease-health related quality of life that resulted in unpredictable findings of smoking-associated quality of life. In future research, the researcher would recommend some ways to improve when conducting the

study, such as considering the years of the past smokers quitting smoking. However, self-reported smoking status can sometimes be unreliable due to factors such as social desirability bias (participants may underreport their smoking behaviour due to perceived stigma associated with smoking) or memory recall errors. Future research can include the use of biochemical tests to confirm for smoking status.

ACKNOWLEDGEMENT

We would like to thank Universiti Teknologi MARA for supporting this study.

REFERENCES

1. Cui Y, Forget EL, Torabi M, Oguzoglu U, Ohinmaa A, Zhu Y. Health-Related Quality of Life and Economic Burden to Smoking Behaviour among Canadians. Can J Public Health. 2019;110(5):533-541. doi: 10.17269/S41997-019-00244-X
2. Rezaei S, Matin BK, Karyani AK, Woldemichael A, Khosravi F, Khosravipour M, Rezaeian S. Impact of Smoking on Health-Related Quality of Life: A General Population Survey in West Iran. Asian Pac J Cancer Prev. 2017; 26;18(11):3179–85. doi: 10.22034/APJCP.2017.18.11.3179
3. Hossain S, Hossain S, Ahmed F, Islam R, Sikder T, Rahman A. Prevalence of Tobacco Smoking and Factors Associated with the Initiation of Smoking among University Students in Dhaka, Bangladesh. Cent Asian J Glob Health. 2017;6(1). doi: org/10.5195/cajgh.2017.244
4. Sagtani RA, Thapa S, Sagtani A. Smoking and Quality of Life-Is There Really an Association? Evidence From a Nepalese Sample. PLoS One. 2019;14(9):1-9. doi: 10.1371/journal.pone.0221799
5. Cheng X, Jin C. The Association Between Smoking and Health-Related Quality of Life Among Chinese Individuals Aged 40 Years and Older: A Cross-Sectional Study. Front Public Health. 2022; 10:1-7. doi: 10.3389/fpubh.2022.779789
6. Viana DA, Andrade FCD, Martins LC, Rodrigues LR, Dos Santos Tavares DM. Differences in Quality of Life among Older Adults in Brazil According to Smoking Status and Nicotine Dependence. Health Qual Life Outcomes. 2019;17(1):1-11. doi: 10.1186/S12955-018-1072-Y
7. Orji CC, Ghosh S, Nwaobia OI, Ibrahim KR, Ibiloye EA, Brown CM. Health Behaviors and Health-Related Quality of Life Among U.S. Adults Aged 18–64 Years. Am J Prev Med. 2021;60(4):529-536. doi: 10.1016/j.amepre.2020.10.020
8. Jing Z, Li J, Wang Y, Yuan Y, Zhao D, Hao W, Yu C, Zhou C. Association of Smoking Status and Health-Related Quality Of Life: Difference among Young, Middle-Aged, and Older Adults in Shandong, China. Qual Life Res. 2021;30(2):521-530. doi: 10.1007/S11136-020-02645-9
9. Haghani A, Arpawong TE, Kim JK, Lewinger JP, Finch CE, Crimmins E. Female Vulnerability to The Effects Of Smoking on Health Outcomes in Older People. PLoS One. 2020;15(6):1-15. doi: 10.1371/JOURNAL.PONE.0234015
10. Yang X, Jing W, Gao C, Attanй I. Smoking Behavior of "Marriage Squeezed" Men and its Impact on Their Quality of Life: A survey study in China. Am J Mens Health. 2019;13(3). doi: 10.1177/1557988319859733
11. Chinwong D, Mookmanee N, Chongpornchai J, Chinwong S. A Comparison of Gender Differences in Smoking Behaviors, Intention to Quit, and Nicotine Dependence among Thai University Students. J Addict. 2018; 2018:8081670. doi: 10.1155/2018/8081670
12. Ramsey MW Jr, Chen-Sankey JC, Reese-Smith J, Choi K. Association Between Marital Status and Cigarette Smoking: Variation by Race and Ethnicity. Prev Med. 2019; 119:48–51. doi: 10.1016/j.ypmed.2018.12.010
13. Dong X, Ding M, Chen W, Liu Z, Yi X. Relationship Between Smoking, Physical Activity, Screen Time, and Quality of Life Among Adolescents. Int J Environ Res Public Health. 2020;17(21):8043. doi: 10.3390/ijerph17218043
14. Wang Q, Shen JJ, Sotero M, Li CA, Hou Z. Income, Occupation and Education: Are They Related to Smoking Behaviors in China? PLoS One. 2018;13(2): e0192571. doi: 10.1371/journal.pone.0192571
15. Xu Y, Xu S, Wu Q, Chen H, Yao D, Hu XJ, Zhang X. Analysis of Nicotine Dependence Among Daily Smokers in China: Evidence from a Cross-Sectional Study in Zhejiang Province. BMJ Open. 2022;12(10): e062799. doi: 10.1136/BMJOPEN-2022-062799