

# THE EFFECT OF SMOKING BEHAVIOR ON THE QUALITY OF LIFE AMONG FINAL-YEAR STUDENTS BY USING PRECEDE MODEL IN SARI MUTIARA INDONESIA UNIVERSITY, INDONESIA

Hana Ike Dameria Purba<sup>1\*</sup>, Mondha Kengganpanich<sup>2</sup>, Sarunya Benjakul<sup>2</sup>

<sup>1</sup>Study Program of Public Health, Faculty of Pharmacy and Health Science, Sari Mutiara Indonesia University, Medan, Indonesia

<sup>2</sup>Department of Education and Behavioral Sciences, Faculty of Public Health, Mahidol University, 420/1 Rajvithi Road, Bangkok 10400, Thailand

Corresponding Author: Hana Ike Dameria Purba

E-mail: purbahana@yahoo.com, Phone: +62-81-397850898

## ABSTRACT

**Introduction:** The quality of life (QoL) of university students is an important aspect of creating the next leader in the future, developing strong human resources, and improving the quality of generation. Therefore it is important to understand the factors involved in improving the QoL of university students. **Methods:** This study intended to explore QoL among the final-year students and factors related to it in the University by applying the PRECEDE model through a cross-sectional study. A total sample size of 171 final-year students was drawn by using proportional sampling and probability proportional to size (PPS) for program selection and selected samples from each study program by accidental technique. Data were collected using the self-administered questionnaire, and WHOQOL-BREF was used to measure the QoL. **Result:** Data were analyzed by univariate and bivariate. The overall QoL was moderated (59.6%). There was a significant association between the availability of selling cigarettes around the university and QoL ( $p=0.019$ ), ease to buy cigarettes, and QoL ( $p=0.038$ ). Enabling factors especially had a direct impact on the QoL. **Conclusion:** Providing regulations related to smoking to the academic community, giving moral responsibility to lecturers, and controlling the selling of cigarettes around the university would help increase the QoL.

**Keywords:** PRECEDE model, quality of life, final-year students

## INTRODUCTION

Quality of life (QoL) of final-year students is an important aspect of creating the next leader in the future, as a benefit for developing strong human resources, improving the quality of generation, and as achievement indicators of many aspects such as health, economics, and education. Some factors that influence the QoL of university students like gender, income, education of parents, place of residence, and smoking (Sabbah *et al.*, 2013). On the other hand, social support from family, friends, and significant others also has an impact on the QoL of the students (Greimel *et al.*, 2016).

Lifestyle among the students was one of the shapes of behavior influenced by fraternization. Fraternization donated various lifestyle choices that have a big hand in changing the character and habits

among students. Various lifestyles among students such as premarital sexual behavior, smoking behavior, and lack of physical activity were some negative impacts on the relationship that occur among students (Zhang, Y. *et al.* 2012). Not infrequently, students who previously did not have those behaviors eventually become involved due to the influence of fraternization. Conditions students who lived abroad or stay away from their families gave a great opportunity for fraternization influenced among students.

One of the fraternization's impacts on student behavior was the magnitude of the influence of close friends to smoke. They were hanging out with friends who smoked that were likely to smoke when compared with those who hang out with friends who did not smoke (Simons-Morton, B. and Farhat, T. 2010)). Peers group also had an association with

premarital sexual behavior but this study had not found the role of peers in adolescent sexual behavior.

Smoking was the cause of 6 million deaths per year in the world (WHO, 2016). In 2009 in Indonesia, 30.4% of students in Indonesia had ever smoked with percentages between genders as much as 57.8% for men and 6.4% for women. The percentage of smokers in adolescence in Indonesia amounted to 20.3% with the percentage of men amounting to 41.0% and 3.5% for women. Also, 22.5% of adolescents who used a variety of tobacco products amounted to 41.0% were men and 6.2% are women. At the end of 2014, the prevalence of smoking among men and women based on the use of tobacco among young people was 36.2% in men and 4.3% in women. The popularity of smokeless tobacco use among young people has a prevalence of 3.0% in men and 1.1% in women. Smoking causes decreased QoL and have a negative relationship between smoking and QoL (Goldenberg, Danovitch, and IsHak, 2014; SEARO, 2015). However, it was not focused on the QoL among the final-year students.

Based on the review of previous studies and the above problems, this study intended to explore what are the factors that associated with QoL among university students in Indonesia, especially in the final-year students in both three and four-year programs by applying PRECEDE model (Predisposing factors, reinforcing factors, enabling factors).

## **METHODS**

The cross-sectional study was conducted to assess the QoL of the final-year students and the factors related to their QoL. The study was conducted at Sari Mutiara Indonesia University in the year 2017. The population in this study was the final year students from the four-year program consisting of the Study Program of Nursing, Study Program of Pharmacy, Study Program of Communication Science,

Study Program of Accounting and the three-year program consists of Study Program of Medical Laboratory Technician and Study Program of Biomedical Engineering. 175 samples were taken by proportional sampling. After the sample size from both programs was counted, the study program of each faculty was selected by using probability proportional to size (PPS). This technique is used to give a chance for the study program that has a larger population to have a greater probability of being selected as the sample compared to the study program that had a smaller population. Based on a logical basis and proportionally, six study programs were taken as the sampling target. Three study programs were taken from the Faculty of Pharmaceutical and Health Science, one study program from the Faculty of Science, Technology, and Information, and two study programs from the Faculty of Law and Social Science. After the study programs were selected, the study programs were separated based on the education program (four-year program or three-year program). 122 samples were taken from the four-year program and 53 samples were taken from the three-year program). Finally, the sample was selected by using a convenience sampling technique from each study program until the required sample was enough.

The primary data was obtained directly from final-year students through self-administered questionnaires to get information and additional answers. The WHOQOL-BREF was used to assess the QoL of final-year students. QoL of the final-year students was categorized into poor, moderate, and good. The researcher also carried out a pre-test among 30 students in Sari Mutiara Indonesia University among third-level students of the Study Program of Public Health, to actual data collection to check the validity and reliability of the research instrument. Secondary data were obtained from the internal University of Sari Mutiara Indonesia in the form of the number of

final-year students and others data needed. Independent variables in this study consisted of general characteristics, predisposing factors such as students' perception-related smoking behavior, reinforcing factors such as social support from family, friends, teachers, family behavior, peers group behavior, and teacher behavior, and also enabling factors such as availability, accessibility, and university activities. Whereas, the dependent variable in this study was the quality of life of final-year students. Data were processed by using SPSS 16 and analyzed by using linear regression.

The research protocol was submitted to the Ethical Review Committee for Human Research, Faculty of Public Health, Mahidol University before data collection. After getting approval from the Ethical Review Committee for Human

Research, Faculty of Public Health, Mahidol University (COA. No. MUPH 2017-098), the researcher received approval from Sari Mutiara Indonesia University in advance before data collection.

**RESULTS**

The response rate of this study was 97.7% among the overall final-year students. However, the response rate for bachelor's degrees was 96.7% Which came from Study Program of Nursing, Study Program of Pharmacy, Study Program of Communication Science, Study Program of Accounting, and 100% for Diploma degrees that come from Study Program of Medical Laboratory Technician and Study Program of Biomedical Engineering. Among 171 final-year students, only 39.2% had a good level of QoL

**Table 1.** Number and percentage of 171 final year students by level of overall QoL and each domain

Domains	Level of QoL			Mean ± SD	Min	Max
	Poor n (%)	Moderate n (%)	Good n (%)			
Physical health	1 (0.6)	106 (62.0)	64 (37.4)	25.51 ± 2.903	15	34
Psychological	2 (1.2)	86 (50.3)	83 (48.5)	22.18 ± 3.180	10	30
Social relationships	3 (1.8)	123 (71.9)	45 (26.3)	10.62 ± 1.766	3	15
Environment	2 (1.2)	129 (75.4)	40 (23.4)	27.06 ± 4.275	8	40
Overall QOL	2 (1.2)	102 (59.6)	67 (39.2)	92.99 ± 10.94	38	125

**Table 2.** Association between general characteristics and QoL among the final-year students (n=171)

General characteristic	n	%	p-value per domain/ mean ± SD				QoL
			Physical domain n	Psychological domain	Social domain n	Environmental domain	
<b>Gender</b>			0.995 <sup>b</sup>	0.627 <sup>b</sup>	0.574 <sup>b</sup>	0.696 <sup>b</sup>	0.507 <sup>b</sup>
Male	43	25.1	25.5±3.4	21.9±3.7	10.5±2.1	26.8±4.7	91.86 ± 13.7
Female	128	74.9	25.5±2.7	22.2±2.9	10.7±1.7	27.1±4.1	93.4 ± 9.9

General characteristic	n	%	p-value per domain/ mean $\pm$ SD				QoL
			Physical domain	Psychological domain	Social domain	Environmental domain	
<b>Parents education</b>							
<i>Father education</i>			0.611 <sup>c</sup>	0.840 <sup>e</sup>	0.286 <sup>c</sup>	0.144 <sup>c</sup>	0.357 <sup>c</sup>
Primary school	14	8.2	24.6 $\pm$ 3.2		9.9 $\pm$ 1.3	24.6 $\pm$ 2.3	88.1 $\pm$ 7.7
Junior high school	19	11.1	25.0 $\pm$ 2.7		10.4 $\pm$ 1.6	26.6 $\pm$ 3.0	91.8 $\pm$ 8.9
Senior high school and first associate's degree	99	57.9	25.6 $\pm$ 3.2		10.7 $\pm$ 1.9	27.3 $\pm$ 4.8	93.4 $\pm$ 12.5
Third Associate's and Bachelor's degree	33	19.3	25.9 $\pm$ 2.1		11.0 $\pm$ 1.5	27.8 $\pm$ 3.6	94.9 $\pm$ 7.7
Master and Doctoral Degree	6	3.5	25.5 $\pm$ 2.3		10.2 $\pm$ 1.2	25.8 $\pm$ 4.6	90.8 $\pm$ 7.7
<i>Mother education</i>			0.951 <sup>e</sup>	0.947 <sup>c</sup>	0.946 <sup>c</sup>	0.155 <sup>c</sup>	0.725 <sup>c</sup>
Primary school	26	15.2		22.5 $\pm$ 2.5	10.5 $\pm$ 1.7	25.8 $\pm$ 3.6	92.0 $\pm$ 9.6
Junior high school	24	14.0		22.3 $\pm$ 3.1	10.5 $\pm$ 1.5	26.0 $\pm$ 2.9	91.1 $\pm$ 8.3
Senior high school	83	48.6		22.1 $\pm$ 3.6	10.7 $\pm$ 1.9	27.5 $\pm$ 4.8	93.4 $\pm$ 13.1
Third associate's and bachelor's degree	38	22.2		22.2 $\pm$ 2.7	10.6 $\pm$ 1.6	27.5 $\pm$ 3.9	93.9 $\pm$ 7.8
<b>Money is given per month</b>			0.023 <sup>b</sup>	0.560 <sup>b</sup>	0.637 <sup>b</sup>	0.308 <sup>b</sup>	0.258 <sup>b</sup>
$\leq$ Rp 1,000,000.-	133	77.8	25.2 $\pm$ 2.8	22.1 $\pm$ 3.1	10.7 $\pm$ 1.8	26.9 $\pm$ 4.3	92.5 $\pm$ 10.9
$>$ Rp1,000,000.-	38	22.2	26.5 $\pm$ 2.9	22.5 $\pm$ 3.4	10.5 $\pm$ 1.5	27.7 $\pm$ 4.3	94.8 $\pm$ 11.1
(Mean = 1,023,391.81, SD = 42,0758.648, Min = 100,000, Max = 3,000,000)							
<b>Place of residence</b>			0.434 <sup>c</sup>	0.346 <sup>c</sup>	0.067 <sup>c</sup>	0.142 <sup>c</sup>	0.242 <sup>c</sup>

General characteristic	n	%	p-value per domain/ mean ± SD				QoL
			Physical domain	Psychological domain	Social domain	Environmental domain	
Stay with parents	27	15.8	26.0±2.4	22.3±2.7	11.1±1.6	28.4±3.2	95.4± 7.9
Stay with family (uncle/aunty/relatives but not with parents)	9	5.3	26.7±4.4	23.3±5.2	10.0±2.2	27.2±5.7	95.0±17.4
Stay in the boarding house	131	76.6	25.3±2.9	22.0±3.1	10.5±1.8	26.7±4.3	92.1±10.9
Others	4	2.3	26.0±1.4	24.3±3.3	12.3±1.0	30.0±5.6	100.3±10.4

p-value from independent samples t-test, p-value from ANOVA test, and p-value<sup>c</sup> from KruskalWallist test, \*significance at p-value ≤0.05

Table 2 showed that money is given per month give an effect on the physical domain. The availability of seller cigarettes within 500 meters from the university gave the effect to quality of life of the students and also its domain such as physical domain, psychological domain, social domain and environmental domain. Other than that, ease in getting cigarettes also gave

the effect on the QoL and physical domain. The availability cigarette shop within 500 meters from the residence gave the effect to physical domain and also to the psychological domain of quality of life. The availability of a smoking ban in residence gave the effect to the social domain and environmental domains. The details information can be seen in Table 3.

**Table 3.** The association between PRECEDE factors and QoL among final-year students (n= 171)

Variable	N	p-value/Mean ± SD				Overall QoL	
		Physical domain	Psychological domain	Social domain	Environmental domain		
<b><u>PREDISPOSING FACTORS</u></b>							
<b>Student's perceptions related to smoking behavior</b>							
Positive perception	102	59.6	22.5±3.0			93.2±9.2	
Neutral perceptions	60	35.1	21.9±3.2			93.3±11.7	
Negative perceptions	9	5.3	20.6±4.6			88.2±21.1	
<b><u>REINFORCING FACTORS</u></b>							
<b>Social support related smoking behavior</b>							
			0.335 <sup>b</sup>	0.664 <sup>b</sup>	0.967 <sup>b</sup>	0.713 <sup>b</sup>	0.385 <sup>b</sup>

Variable	N	p-value/Mean ± SD					
			Physical domain	Psychological domain	Social domain	Environmental domain	Overall QoL
Low perceived social support	104	60.8	25.3±2.8	22.1±3.3	10.6±1.8	26.9±4.4	92.4±11.4
High perceived social support	67	39.2	25.9±3.0	22.3±2.9	10.6±1.6	27.2±4.0	93.9±10.2
<b>Social behavior toward smoking behavior</b>			0.245 <sup>b</sup>	0.386 <sup>b</sup>	0.627 <sup>b</sup>	0.857 <sup>b</sup>	0.34 <sup>b</sup>
Social relationship at risk	166	97.1	25.5±2.9	22.1±3.2	10.6±1.8	27.1±4.3	92.9± 11.1
Relationship not at risk	5	2.9	27.0±1.6	23.40±1.517	11.0±1.6	27.4±2.2	97.6± 3.6
<b>ENABLING FACTORS</b>							
<b>Cigarette shop within 500 meters from the residence</b>			<0.001 <sup>b</sup>	0.002 <sup>b</sup>	0.335 <sup>b</sup>	0.273 <sup>b</sup>	0.196 <sup>b</sup>
Yes	167	97.7	25.6±2.8	22.3±3.0	10.7±1.7	27.2±4.0	93.5 ±10.1
No	4	2.3	20.3±4.1	17.3± 5.4	8.5±3.8	21.0±9.3	72.8 ±25.0
<b>Cigarette shop within 500 meters from the university</b>			<0.001 <sup>b</sup>	<0.001 <sup>b</sup>	0.022 <sup>b</sup>	0.037 <sup>b</sup>	0.019 <sup>b</sup>
Yes	162	94.7	25.7±2.7	22.5±2.9	10.8±1.6	27.4±3.9	93.9 ± 9.6
No	9	5.3	22.0±3.7	17.3±4.3	8.1±2.8	21.7±6.8	75.9 ±18.5
<b>The affordable of cigarette's price</b>			0.640 <sup>c</sup>	0.807 <sup>c</sup>	0.375 <sup>c</sup>	0.644 <sup>c</sup>	0.780 <sup>c</sup>
Expensive	61	35.7	25.6±2.7	22.3±2.9	10.9±1.9	27.5±4.7	94.1 ±10.7
Moderate	52	30.4	25.5±3.4	21.8±3.9	10.6±1.9	26.9±4.7	91.9±13.4
Cheap	10	5.8	26.4±2.1	22.20±2.9	9.90±1.4	25.9±3.0	92.6 ± 6.4
Don't know	48	28.1	25.2±2.8	22.4±2.9	10.5±1.4	26.9±3.4	92.9 ± 9.0
<b>Ease in getting a cigarette</b>			0.001 <sup>c</sup>	0.071 <sup>c</sup>	0.588 <sup>c</sup>	0.214 <sup>c</sup>	0.038 <sup>c</sup>
Yes	149	87.1	25.7±2.8	22.2±3.1	10.7±1.8	27.2±4.3	93.4 ±10.5
No	7	4.1	21.7±2.9	19.9±4.7	10.0±2.7	24.3±4.5	82.7 ±15.3
I don't know	15	8.8	25.1±3.2	23.2±3.3	10.5±1.5	27.3±4.3	94.1 ±11.1
<b>The available of education-related the dangers of smoking</b>			0.926 <sup>b</sup>	0.173 <sup>b</sup>	0.265 <sup>b</sup>	0.513 <sup>b</sup>	0.341 <sup>b</sup>
Yes	149	87.1	25.5±2.9	22.3±3.1	10.68±1.8	27.14±4.4	93.30±10.9
No	22	12.9	25.45±3.4	21.32±3.5	10.23±1.4	26.50±3.6	90.91±11.4
<b>The available information in any media related anti-smoking</b>			0.856 <sup>c</sup>	0.141 <sup>b</sup>	0.198 <sup>c</sup>	0.180 <sup>c</sup>	0.307 <sup>c</sup>

Variable	N	p-value/Mean ± SD					Overall QoL
		Physical domain	Psychological domain	Social domain	Environmental domain		
Every day (20 – 30 times)	44	25.7	25.5±3.4	22.2±3.9	10.9±2.1	28.1±5.8	94.4 ±14.8
Often (10 – 19 times)	34	19.9	26.0±2.7	22.7±2.6	10.6±1.5	27.3±3.4	94.4 ± 8.2
1-2 times per week (5 - 9 times)	26	15.2	25.5±2.6	22.2±2.8	10.8±2.1	26.5±4.2	92.6 ±10.3
Less than once a week (1-4 times)	50	29.2	25.3±2.8	22.5±2.7	10.5±1.4	26.8±3.2	92.7 ± 8.3
Never (0 time)	17	10.0	25.2±2.6	20.35±3.6	9.8±1.9	25.4±3.7	88.1±11.5
<b>The availability of a smoking ban in the university</b>			0.086 <sup>b</sup>	0.331 <sup>b</sup>	0.619 <sup>b</sup>	0.495 <sup>b</sup>	0.243 <sup>b</sup>
Yes	169	98.8	25.6±2.9	22.2±3.2	10.6±1.8	27.1±4.3	93.1 ±11.0
No	2	1.2	22.0±2.8	20.0±1.4	10.0±1.4	25.0±1.4	84.0 ± 0.0
<b>The availability of a smoking ban in the residence</b>			0.422 <sup>b</sup>	0.536 <sup>b</sup>	0.037 <sup>b</sup>	0.028 <sup>b</sup>	0.176 <sup>b</sup>
Yes	73	42.7	25.3±2.6	22.4±2.7	10.9±1.7	27.9±3.9	94.3± 9.1
No	98	57.3	25.7±3.1	22.1±3.5	10.4±1.8	26.4±4.4	92.0 ±12.1

p-value from independent samples t-test, p-value from ANOVA test, and p-value<sup>c</sup> from Kruskal Wallist test, \*significance at p-value ≤0.05

**Table 4.** The significant association between PRECEDE factors and QoL among final-year students by using regression linear analysis (n= 171)

Variable	Unstandardized Coefficients	Beta (Standardized Coefficients)	t	Sig.
(Constant)	68.351		16.510	<0.001
Cigarette shop within 500 meters from university	20.594	.422	6.185	< 0.001
The availability of a smoking ban in the residence	3.358	.152	2.250	0.026
Money given per month	.000	.296	4.185	< 0.001
Stay in the boarding house	-5.452	-.212	-3.043	0.003

F = 13.872  
R = 0.501  
R Square = 0.251  
Adjusted R Square = 0.232

Based on Table 4 above it shows the correlation between independent variable; Cigarette shop within 500 meters from university, the availability of a smoking ban in the residence, money is given per month and stay in boarding house and dependent variable (quality of life of the students) had strong correlation (R = 0.501). Those of

variables above have 23.2% contribution to the quality of life of the final year students.

**DISCUSSION**

The majority (59.6%) of the final-year students had a moderate level of overall QoL according to the WHOQOL-

BREF. It is also supported by the domains item that also showed that the level of QoL among the final-year students in each domain was at a moderate level. However, when the students were asked to rate their QoL, 60.2% mentioned that they had good QoL, and only 19.9% neither poor nor good. The rate is given by the students about their QoL, and the scoring result by QoL measurements based on the domain of QoL and the overall QoL showed the opposite answer. It was due to factors in which the students perceived the QoL to the extent that they felt personal rather than considering that other factors such as environment, social, physical, and psychological are factors that also affect their QoL. However, when asked deeply about domains related to QoL such as physical, psychological, social and environmental factors, they have other perceptions about this. It was supported by the claim that a positive environment did not necessarily impact a better QoL, but was determined by how individuals interpret their conditions and interact with their social and environment (Tonon, 2012). So that the different perspectives among their own QoL and their QoL in each domain can be different, but it has not found the previous study that can explain this condition.

Concerning each question of WHOQOL-BREF, two parts had the majority answer in moderate and a little level such as about having enough energy for everyday life and the opportunity for leisure activities. Regarding having enough energy for everyday life, 54.4% of students had a moderate amount of energy, followed by 18.7% had a little energy for everyday life. Other than that, 42.1% of students said that they had an opportunity for leisure activity moderately, followed by 31.6% of students had little opportunity for leisure activity. It was supported by the condition of the students' status as final year students. All of them were busy with their research and field practice.

The association between general characteristics and QoL showed that money given per month had a significant association with the physical domain. It found that the mean score among the students had more than Rp 1,000,000,- per month was higher in the physical domain than the students that got money less than or equal Rp 1,000,000,- per month. It had the same result with the previous study that proved there was an association between financial status regarding the amount and physical domain. However, in this previous study, the significant association not only financial status but also gender. (Sabbah *et al.*, 2013) Other than that, another study found the association between the general characteristic and each domain of QoL by multivariate analysis to another item of general characteristics (Al-naggar, Osman and Musa, 2013).

The fact that there was no significant association between gender and QoL had proved by the previous study among university students in Hungary. It mentioned that, if we compare QoL within the group (among the students in the University) based on gender, it did not give a significant association (Edvy, 2013). However, the result showed that females had higher QoL than males. Other than that, QoL means score of the male was lower than the mean score of the overall QoL.

The previous study among medical students in China showed that there was a significantly different score between males and females regarding the physical and psychological domain (Zhang *et al.*, 2012). The score among the male medical students was higher than female students. The different proportional sample of male and females between both of study might be had an impact to the mean score of each domain among male and female students. Other than that, the different background of education and tension among medical students and the final-year students also impacted to the psychological domain. It needed to know about the level of tension between these two populations that might



be given different impacts to the psychological domain. At a certain level of tension may be will show a significantly different between male and female toward psychological domain. The large variety of educational program in the population of final-year students may be had a different impact on the psychological domain so that this can't bring up the same pressure conditions among final-year students. Even there were all in the final-year education, but the tension that each study program gave to them were different so it can not represent the same pressure condition (Zhang *et al.*, 2012).

This study also showed that the QoL of the final-year students influenced by another factor such as family income and parents job that influenced the amount of money that students get per month. It can be seen from the result that the amount of money given by parents per month had a significant association to physical domain. Which was having enough money to meet their needs was also a part of the environmental domain. Even the number of money that parents give per month did not have a direct significant association to QoL, however the data showed that the students got money more than IDR 1,000,000.- per month had higher QoL mean score (94.8) than the students that got money less then IDR 1,000,000.- per month (92.5). It revealed that money got per month also as a factor to increase the score of QoL of the final-year students. The students that had enough money for their life will be able to get a more prosperous life. Regarding to the item of environmental domain, it told that the students that got money more than IDR 1,000,000.- per month had better healthy physical environment, feeling safe in their daily life and satisfied with their living place, having enough money to meet their needs, got a lot of information, satisfied with their access to health service and transportation. That is because they can choose a better environment and facilitation to meet everything their needs and finally will be feel satisfied with everything they

got. It is common that a better environment and amenities had a higher price.

Final-year students that live with parents and stay with family (uncle/ aunty/ relatives but not with parents) had a higher mean score in QoL than the students that stay in boarding house. The data showed that the mean score of QoL of the final-year students that live with parents was the highest (95.4), and followed by the students that lived with family (95.0). Eventhough the place of residence of the final year, students did not have a significant association, but it showed the difference mean score between the different place of residence. The role of parents in student life is very important. The existence of students who are as well as part of adolescents is inseparable from the process of development of life at the stage of adolescence. One of the most important stages of life in adolescence is the social-emotional development of them. One of the roles of parents in student life is to help the development of the social and emotional life of students. Socio-emotional development can be interpreted as the ability of students to manage their emotions with other people about the hearts and concerns among humans and the ability to manage the emotions themselves and others so that he can interact well with peers, parents or with people Mature in the surrounding environment.

The role of parents is very important in supervising and educating teenagers not to fall into a social environment that deviates and has positive emotions. It supports the findings of the study where students living with parents and families have a higher average QoL compared to students living in boarding houses or rented house and away from families. Students living with families are seen as more supervised than those who are far from the family. Teenagers who experience many new things and new challenges are in dire need of a family role in providing social and emotional support, guidance and direction as well as guiding students in making the

right decisions in their life as adolescents. Various problems faced by students, they need the guidance and role of the family so that students can solve the problem in the right way and the right steps (Nadra, 2016).

There was no a significant association between students' perception related smoking behavior to QoL. Smoking behavior was one of many factors that gave influence to the behaviors. Besides the smoking behavior, the condition of environmental is needed to consider as another factor that gave influence to QoL. The percentage of students' perception related smoking behavior was on positive perception. However, students' perception was not enough to give the impact to QoL. Enabling factors is needed to be considered as the factors of QoL.

There was no an association significantly between social support toward smoking behavior to QoL and each domain. Even there was no significant association between social support and QoL, but the result showed that the mean score between low perceived social support and high perceived social support were different. The QoL mean score of the high perceived social support was higher than the mean score of low perceived social support. This result also happened between social behavior and QoL. In which the final-year students that had a social relationship at risk had a lower mean score of QoL than the students that did not have a social relationship at risk. The data showed that the QoL mean score of high perceived social support toward smoking behavior was 93.9. Other than that, the QoL mean score among the final-year students that had a social relationship at risk toward smoking behavior was lower than the final-year students that had no social relationship at risk.

Social support and social behavior had a big impact on students' lifestyles, and it was also will bring the impact to the QoL. The relationship between peers group, family, teachers and the students will bring the positive or negative impact to QoL. As

it mentions before, peers group has a large position in influencing the behavior of the students (Tomé *et al.*, 2012). These behavior changes because the students try to adjust themselves to the environment especially for their relationship with their peer's group. The relationship that occurs between students inevitably affected the formation of the characters and their habits (Salvy *et al.*, 2009; Simons-Morton and Farhat, 2010; Fitzgerald, Fitzgerald and Aherne, 2012). Socially patterned habits of students will affect their lifestyles and had a major impact in shaping their personality to the fore (Reitz *et al.*, 2011). The previous study also mentioned that various lifestyle among students such as smoking behavior was a negative impact from the relationship that occurs among students (Jose C. León, José Carmona, 2010).

Adolescent smoking behavior was strongly influenced by peers and best friends. It supported this study result that revealed the majority of people that influenced the final-year students to smoke at the first time was a friend (57.1%). The role of peers and parents had a big hand in controlling the smoking behavior in adolescents. Teens were hanging out with friends who smoked was likely to smoke compared with those who hang out with friends who did not smoke. Parental and family supervision also had an important role in controlling the adolescent smoking behavior through providing oversight of friends interaction (Simons-Morton and Farhat, 2010). Other than that, smoking causes decreased QoL of the final-year students (Goldenberg, Danovitch and IsHak, 2014; SEARO, 2015).

Regarding enabling factors related to smoking behavior, the availability of selling cigarette around the university and easy to buy cigarette was significant factors to QoL. The availability of cigarettes around the university makes it easier for students to get cigarettes. It also supported with the ease of getting cigarettes in Indonesia. There was no age limit or age ban for cigarette buyers. It also supported

by the result that showed the availability of selling cigarette within 500 meters from the university had a significant association with every domain of QoL. The availability of selling cigarette within 500 meters from residence had a significant association to the physical domain and psychological domain. Other than that, easy in getting cigarette had a significant association to physical domain. The availability of a smoking ban in residence had the significant association to the social domain and environmental domain.

One of the most striking differences of QoL means a score of the students related the association between enabling factors of smoking behavior, and QoL was in the availability information in any media related anti-smoking item. Even the study did not find a significant association among them. However, the mean score of the final-year students that never got information in any media related to anti-smoking had low QoL mean score than the final-year students that ever got information related anti-smoking. Even more than that, the QoL means score of them was lower than the overall QoL of final-year students.

Media is one of the information intermediaries that are expected to change someone from not knowing to know. Information is expected to provide the knowledge to someone and to achieve the goals of that information. It is related to the dissemination of information about anti-smoking in the media aims to change the knowledge and behavior of a person to cigarettes. As mentioned before, cigarettes had a negative impact on QoL. who receives information about anti-smoking is expected to stay away from smoking behavior. It was because those who received information about smoking behavior are aware and are less likely to have smoking behavior and ultimately result in good QoL (Durkin, Brennan and Wakefield, 2012).

## CONCLUSION

The good level of quality of life in relationship domain and environmental domain were low, by increase the promotion to quit smoking and prevention students from smoking behavior and develop good perception related smoking behavior will help improve QoL of the students. Enabling factors especially had a direct impact on the QoL of the final-year students. By providing regulation related smoking to the students, teachers, and staff, giving moral responsibility to lecturers, and controlling the selling of cigarettes around the university would help increase the QoL of the final-year students. Because the limitation time for data collection, this study collect data from small sample size and using the quantitative technique so, it could not get depth interview to access and support more information. The future study is expected to research the larger sample size to get a more appropriate representative result and qualitative research is needed to get more reliable and better information. Multivariate analysis is needed to get a more appropriate result because QoL caused not only by one factor but many factors interrelated.

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