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## Quality of Life and the Contributing Factors among Elderly in Rural Areas in Yogyakarta

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### ABSTRACT

**Background:** Older people are a high-risk population with decreased health status and quality of life (QoL). There are various conditions that can affect the QoL in older people. QoL in older people requires cooperation from various parties including family members, health workers, and local government to improve it. Understanding factors contributing to QoL among older people is significantly important. **Aims:** The research objective was to analyze the relationship between age, gender, education, and occupational status with QoL in older people. **Methods:** A cross-sectional design was used to identify related factors contributing to QoL among older people. QoL was assessed by using SF-36. This instrument contains eight subgroups namely role-physical, physical function, mental health, bodily pain, social functioning, role-emotional, general health, and vitality. Descriptive statistics and correlation coefficients were used in reporting and analyzing the data. The research was conducted from December 2019 to June 2020 in Pleret, Yogyakarta. The sample was collected by simple random sampling resulting in a total of 102 older people. **Results:** Factors significantly related to the QoL subgroup in this study were as follows. Age ( $p < 0.001$ ) and occupational status ( $p < 0.001$ ) related to physical function, gender ( $p < 0.05$ ) related to mental health, age ( $p < 0.05$ ) and educational level ( $p < 0.05$ ) related to role-emotional and gender ( $p < 0.05$ ) related to general health. **Conclusion:** This study identified factors that contributed to the QoL in older people including age, gender, educational level, and occupational status. A more in-depth investigation is recommended to determine the other QoL contributing factors among older people.

**Keywords:** Older people, Quality of life, Rural area.

### INTRODUCTION

Older people are one of the high-risk population and has been increasing in number. Older people are also attached to a decrease in health status. This declining health status along with the increasing age of older people affects the quality of life (QoL). The decline in health conditions is contrary to the desire of older people to stay healthy even in their old age (Kiik, 2018). Increasing the number of older people will affect various aspects of life including health, social, environmental, and economic. In terms of health, older people experience a decline in anatomic function and also a decrease in immunity. Thus, the condition of older people needs

special attention from various parties (Luthfa, 2018; Mauliana et al., 2020)

Older people make up about 8% of the population in Southeast Asia, or roughly 142 million people, according to the World Health Organization (WHO). The senior population is predicted to quadruple from 2013 to 2050. The population of Indonesia is growing every year, notably among the older people group, which accounts for more than 7% of the total population in 2017, according to the Indonesian Central Bureau of Statistics. The percentage of older people in Indonesia who are 60 years or older is rated 108<sup>th</sup> globally in 2013 alone. In contrast, it is anticipated that 28 million individuals in Indonesia will be above the age of 69.67 in

older men and 73.55 in older women (WHO, 2020; Badan Pusat Statistik, 2021).

Indonesian population is fourth after China, India, and America (Ali et al., 2019). Indonesia is one of the countries in the Southeast Asian region that entered the era of an aging structured population because the population aged 60 years and above was around 9.60%. It is predicted that the number of older populations in 2025 will be 33.69 million. In 2030, there will be 40.95 million and in 2035 will be 48.19 million (Badan Pusat Statistik, 2020).

The health and well-being of this vulnerable population are significant issues of concern. The older people have an average QoL score, but a low one in the social contact area. Health education regarding activity and environmental changes and an increase in social relationships may help in improving the QoL among the older population (Toselli et al., 2020).

Many conditions of older people both directly and indirectly affect the QoL. QoL is influenced by several factors including physical conditions, material conditions, social conditions, psychological conditions, emotional well-being, personal development, and activities. Another factor that affects the QoL of older people is family support (Birren et al., 2014; Catarinella et al., 2015; Mokhatri-Hesari & Montazeri, 2020).

QoL in older people requires cooperation from various parties including family members, health workers, and local government to improve it. This, among others, aims to fulfill and improve daily activities, psychological well-being, and physical needs. On the other hand, changes in the QoL of older people when viewed from the social and environmental aspects are still not widely explored. From year to year, there is an increase in the number of older people. With the increasing life expectancy in older people, it is important to then improve the QoL of older people (Pal et al., 2017).

Data from the Ministry of the Republic of Indonesia shows that Yogyakarta is the province with the highest older people population of 14.50%. In addition, the highest life expectancy in Indonesia is also found in the province of Yogyakarta at the age of 76 years. Data from the Bantul regency health service report in 2019 showed that the largest number of older people were in the work

area of the Pleret subdistrict community health care center with 13,185 older people. For this reason, we are interested in research in the area with the highest number of elderlies by considering the feasibility of conducting research. So this region was chosen as a place of research (Riset Kesehatan Dasar, 2018; Badan Pusat Statistik, 2020). Thus, this study aimed to describe the QoL and its related factors of the older people in the rural area of Pleret Bantul Yogyakarta society.

## METHODS

This descriptive with cross-sectional approach design was conducted after approval by the regional Ethics Committee in the Institute of Health Science Surya Global with the number 1.01/KEPK/SSG/X/2020. This study was conducted at the work area of the Pleret Public Health Center from December 2019 to June 2020. Respondents were older people with a minimum age of 60 years old in the work area of the Pleret Health Care Center who met the inclusion criteria. The inclusion criteria included being willing to be a respondent, able to communicate verbally, and living at the study sites. The research sample was 102 respondents who were determined using the guideline for determining sample size by Lemeshow (1997).

The sampling technique used in this research was simple random sampling. The researchers and a research assistant (nursing student) gathered the data. The staff of the Pleret Public Health Center and the first author coordinated the data collection process. The list of older people residents in the working area of Pleret Public Health Center was provided. The respondents were chosen randomly from the list by the researchers, who then approached the door to door to the respondents' houses to collect the information. There was no rejection from the selected respondents. Respondents were required to complete the questionnaire, accompanied by the researcher and research assistant. The questionnaires were filled out at the respondents' houses. Before filling out the questionnaire, the researcher explained the purpose of the study and requested the respondents to fill out the informed consent form. After filling out the

questionnaire, the researcher ensured the completeness of the questionnaire.

We used a structured questionnaire covering several aspects, including sociodemographic characteristics. QoL was assessed by using Indonesian version of SF-36 questionnaire (Novitasari et al., 2016). This instrument contains eight subgroups namely role-physical, physical function, mental health, bodily pain, social functioning, role-emotional, general health, and vitality with a total of 36 questions (McHorney et al., 1994).

We conducted data analysis using SPSS (Statistical Package for Social Sciences) version 16.0 for Windows. The baseline characteristics of participants were analyzed using descriptive statistics and were described in terms of age, sex, education, and occupation. The QoL of the older people was presented using a mean and 95% confidence interval (95% CI). Relationships between QoL according to related factors were analyzed using a one-way ANOVA test and an independent t-test. All tests were two-tailed and a *p*-value of <0.05 was considered statistically significant.

## RESULTS AND DISCUSSION

The demographic characteristics of participants are shown in Table 1. The mean age of 102 older people was 66.8 (9.14) years and about 81.4% were females. Approximately fifty-eight percent of the respondents are elementary school graduates and 66.7% are working.

**Table 1.** Baseline characteristics of older people (n=102)

Characteristics	n	%
Age (year)		
60-64	39	38.2
65-69	25	24.5
70-74	18	17.6
≥ 75	20	19.6
Gender		
Male	19	18.6
Female	83	81.4
Education		
Illiterate	31	30.4
Elementary school	59	57.8
Junior high school	9	8.8
Senior high school	3	2.9
Occupation status		
Employed	68	66.7
Unemployed	34	33.3

The mean scores of the subgroups of QoL in participated subjects are depicted in Table 2. The mean score of role-physical was 64.18, physical function 76.14, mental health 72.96, bodily pain 71.53, social functioning 68.62, role-emotional 71.47, general health 51.56, and vitality 69.90.

Table 3 revealed the relationships between the subgroups of QoL among older people and related factors. The results showed the total average score of the highest physical role subgroups in the age group with the age range of 60-64 years (80.20). A *p*-value of <0.001 implied that there was a significant relationship between age and physical function. The physical function also had a significant relationship with occupation status with a *p*-value of < 0.001.

The total mental health subgroups had the highest average score (78.44) in the age group with the age range of 70-74 years. In the gender group, the highest average score was 81.47 for males and a *p*-value of 0.01 indicated a significant relationship between mental health and gender.

**Table 2.** The mean scores of QoL in the older people by each subgroup of QoL

QoL subgroups	Mean score	95% CI
Role-physical	64.18	60.25-68.67
Physical function	76.14	72.26-80.49
Mental health	72.96	68.84-76.16
Bodily pain	71.53	66.98-76.04
Social functioning	68.62	65.62-72.63
Role-emotional	71.47	65.06-76.18
General health	51.56	48.35-54.12
Vitality	69.90	66.23-73.23

The total mean emotional score in the older people age group >75 years was 88.33 and the *p*-value was 0.01 related to age. In the group of education level, the highest average score for senior high school was 88.88 and there was a significant relationship between educational level and role-emotional (*p*-value = 0.04).

Furthermore, results showed that general health subgroups related to gender (*p*-value = 0.01) and the total average

score for the role-emotional component in the male gender group was 60.30.

The results in this study showed that not all factors are related to the subgroups of QoL in older people. The factors that significantly related to a subgroup of QoL

in this study included 1) physical function related to age and occupational status, 2) mental health related to gender, 3) role-emotional related to age and educational level, and 4) general health related to gender.

**Table 3.** The 8 subgroups of QoL among older people according to related factors.

Factor	Variable							
	Role-physical	Physical function	Mental health	Bodily pain	Social functioning	Role-emotional	General health	Vitality
	p-value	p-value	p-value	p-value	p-value	p-value	p-value	p-value
Age <sup>a</sup>	0.93	<0.001*	0.08	0.37	0.01*	0.01*	0.33	0.59
Gender <sup>b</sup>	0.17	0.78	0.01*	0.90	0.39	0.41	0.01*	0.25
Education <sup>a</sup>	0.16	0.14	0.22	0.45	0.71	0.04*	0.15	0.22
Occupation status <sup>b</sup>	0.25	<0.001*	0.14	0.90	0.86	0.99	0.68	0.07

Note: <sup>a</sup>One-way ANOVA test was performed, <sup>b</sup>Independent t-test was performed, \*Significant at  $p < 0.05$  in physical function can be achieved by working or training. Different types of

### Physical function

Similar research has been expressed in a previous study (Liu et al., 2013) and the results revealed that the factors influencing physical function in older people included age. Physical function was related to the age where the ages of 65-69 years had the strongest correlation to physical function compared to other age categories. Functional limits are a well-established predictor of future negative outcomes, such as disability, hospitalizations, admission to nursing homes, and mortality. Physical function has long been researched in older people populations. Even though physical function impairments are more common in older age groups. Midlife is a crucial life stage for the development of impaired functioning even if risk factors can build up over the course of a person's entire lifespan. While the burden is rising for midlife people, the prevalence of impairments in activities of daily living (ADLs) is fairly consistent in older adults. Increasing age is known to decrease individual physical function (Dugan et al., 2018; Wei et al., 2019).

Furthermore, a recent study showed that the individual's occupational status has a strong relationship with the physical function of a person. In line with our findings, a prior study has shown that working people reported a higher QoL compared to those who do not work after adjusting for disease factors (Rueda et al., 2012). Another study showed that physical function in older people can benefit from working status. The biggest improvements

working activities have complementary and varied advantages. Thus, physical activity in working has a stronger impact on physical function (Dugan et al., 2018).

Other studies have also revealed that the QoL of working older people was better than those who did not work. However, it should also be noted that in working older people, the QoL decreases with age and their physical function begins to decline. In addition, in terms of vitality, it was found that older people with lower vitality were influenced by aging, female sex, higher education, and formal workers. Working individuals had higher self-esteem because of steady income and employment. In addition, working in a good position increases one's self-esteem (Alizadeh et al., 2016; Huang et al., 2018; Machón et al., 2017).

### Mental health

The older population's perceptions of psychological well-being appeared to be influenced by gender in one study. The association between QoL and marriage also varied by gender. Compared to single men, married men had a higher QoL. On the contrary, compared to married, separated, or divorced women, single women had a superior QoL. The respondents' educational backgrounds were another aspect that could have an impact on those conclusions (Ferretti et al., 2018; Hidayati et al., 2018).

The older people who participated in our study had little to no schooling. This element may have an impact on how they

evaluate their mental health. It was found in both the community and in the NH research settings that a lower educational background was a predictor of worse psychological QoL among the aging. In the mental health section, it is known that older people with lower mental health were influenced by younger age, male gender, lower education, and formal worker status (Manaf et al., 2016; Alizadeh et al., 2016).

Mental health has been found as an important factor in the QoL of older people in previous studies. Married women had a high rate of use of mental health facilities. When viewed from adolescence between men and women, it was found that female adolescents had a higher risk of self-suicide and depression than boys. Apart from that, the reason why women had lower mental health than men was because of the influence of social interaction in society which caused women to have life pressure and greater stress than men. In addition, women were more likely to raise concerns than men (He et al., 2016; Souza et al., 2006; Xie et al., 2014).

Based on recent studies, physical activity has been shown to have an effect on mental health. It was also found that the physical activity of women was lower than men causing the differences in mental health scores. The mental health of men was found to be higher than that of women. This may be due to better physical and social factors in men. The lower QoL in women can be caused by social vulnerability among them (Doosti-Irani et al., 2018; Farajzadeh et al., 2017; Mirsaedi, 2015; Shayan et al., 2020).

#### **Role-emotional**

A recent study revealed that emotional problems were a factor that needed more attention in older people. The focus on positive and negative emotions and aging may be very limited. A focus on emotional strength is also needed. In circumstances where strong emotions arise, older adults may not be able to regulate their emotions as well as younger people (Wirth et al., 2017).

In line with the results of this study, emotional well-being refers to subjective experiences of positive and negative emotions. These constructs are often defined in terms of happiness, life satisfaction, or a balance between positive and negative influences. In all studies using this definition, improvement in emotional

well-being has been consistently observed in people in their 30s, 40s, 50s, and 60s (Coleman & O'Hanlon, 2017; Kunzmann et al., 2014).

Individual perceptions of the QoL can influence subjective well-being, which indicates a positive and negative evaluation of life. Education influences people's perceptions of the quality of their life. The influence of educational experiences on preferences, expectations, feelings, and integrated emotional states as multiple forces that contribute not only to the formation of personality characteristics but also to social psychological traits such as self-esteem and perceived personal well-being (Ryff, 2014).

#### **General health**

In this study, we found that women had lower general health. This is in line with several studies that showed that the general health of women was lower than men (Aghamolaei et al., 2010; Enjezab et al., 2012; Hajian-Tilaki et al., 2017a, 2017b; Siboni et al., 2019). A possible explanation for the effect of gender on general health is that women may exaggerate their health conditions more than men. Numerous serious chronic diseases are in danger from physical inactivity. The gender differences in physical activity can be explained that men are likely to have better daily activity related to better health outcomes. Furthermore, it has been discovered that physical activity is linked to a higher quality of life (Arifin et al., 2012).

#### **CONCLUSION**

A significant difference was observed between age, occupational status, gender, and educational level with subgroups of QoL. However, not all factors were related to the subgroups of QoL in older people. The subgroups that significantly related to the older QoL included physical function, mental health, role-emotional and general health.

To promote the maintenance of QoL in older people, suitable healthcare services must be improved and treatment techniques must be developed by specialists in healthcare and social work. Furthermore, there is a need for inclusive and affordable care among the elderly, not only for groups of people with disabilities but also for all age groups of older people

and for gender equality. In addition, older adults' mental health must be taken into account instead of only focusing on their physical health.

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## *Theory of Planned Behavior: Intention to Quit Smoking at Universitas Negeri Malang during Pandemic Covid-19*

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### ABSTRACT

**Background:** Smoking has become a lifestyle. Smokers are dominated by teenagers, including college students. Smoke from cigarettes clearly poses a danger to the body's health and the environment, especially during the COVID-19 pandemic. During the pandemic, college students spend more time at home which can increase smoking behavior too. The purpose of this study is to analyze the description of the intention to quit smoking at the State University of Malang during COVID-19 based on the Theory of Planned Behavior (TPB). **Methods:** This research is a type of quantitative analysis using primary data. The instrument used is a questionnaire which is filled out independently by the respondent. Data collection was done online for 100 students of the State University of Malang. The statistical test used in the analysis is the Chi-square test and Regression Logistic. **Results:** Variables related to the intention to quit smoking were attitude ( $\text{sig}=0.03 < \alpha=0.05$ ) and behavioral control ( $\text{sig}=0.00 < \alpha=0.05$ ), while the subjective norm variable had no relationship with intention, quit smoking ( $\text{sig}=0.077 > \alpha=0.05$ ). Behavioral control has a significant effect on the intention to stop smoking ( $\text{sig} = 0.00 > \alpha=0.05$ ). **Conclusion:** There is a relationship between attitude and behavioral control with students' intention to quit smoking. Only behavioral control affects the intention to quit smoking, so it is necessary to strengthen this variable to increase the intention of students at the State University of Malang to quit smoking and as an effort at tobacco control among adolescents.

**Keywords:** College, Intention to quit smoking, TPB.

### INTRODUCTION

For years, the issue of cigarettes has become an important part of the health policy agenda in Indonesia (Komnas PT, 2019). Smoking behavior seems to have become a lifestyle and current trend (Naisali, Putri and Nurmaningsari, 2017). Smoking has become a daily habit that is carried out anytime and anywhere, starting with small children and adults as well as males and females, whether rich or poor (Alamsyah and Nopianto, 2017).

Data from the Global Health Observatory (GHO) in 2015 estimated that >1.1 billion people in the world consume cigarettes which are dominated by men (WHO, 2016). Indonesia ranks top for the highest prevalence of smokers in Asia (Komnas PT, 2019). Based on the 2018 Riskesdas, it is estimated that >97 million people have been exposed to cigarette smoke (Kemenkes RI, 2019). East Java Province in 2018 contained at least 28.9%

of the total population (Ministry of the Republic of Indonesia, 2018).

The prevalence of smokers on a national scale in the adolescent age group has increased significantly. There is an increase in the population aged 18 years which was initially around 7.2%, increasing to 9.1% (Ministry of Republic of Indonesia, 2018). Malang City has around 55.59% of adolescents who consume >60 cigarettes per week (Central Bureau of Statistics, 2016). There are 19.6% smokers aged 15-19 years and 33.2% smokers aged 20-24 years (JDIH, 2019). This is the age at which students are included in the category.

The city of Malang is known as an education city that has several major universities in Indonesia which are the destination for students to continue their studies. Malang City has at least 62 public and private universities, with a total of ±210,862 students (Malang State University, 2019). Malang State University

is one of the largest public universities in Malang City.

Since 2009, the State University of Malang has launched a Smoke-Free Campus policy by banning smoking in the campus area as well as terminating cooperation and refusing scholarships sponsored by tobacco companies (Rampisela, 2009). However, until now this is still a discussion and no action has been taken.

It is known that cigarettes have various negative impacts on users and the surrounding environment. One cigarette contains chemical compounds in the form of carbon monoxide (CO), TAR, nicotine, and other hazardous materials (Kemenkes RI, 2017). These compounds can be harmful to health such as decreasing oxygen levels in the blood, triggering cancer or being carcinogenic, and causing addiction (Indonesian Ministry of Health, 2017). The ASEAN region contributes to the number of smokers as much as 10% of the total smokers in the world and 20% of the global causes of death due to tobacco (Alamsyah and Nopianto, 2017). Since 2017, non-communicable diseases have become the highest contributor to death in Indonesia whose risk factor is lifestyle (smoking behavior) (TCSC IAKMI, 2020).

Meanwhile, during the COVID-19 pandemic like now, smoking has a high risk. A smoker is twice as likely to be infected with COVID-19 as a non-smoker (Naresawari et al., 2020; Zhao et al., 2020). The World Health Organization (WHO) (2020) revealed that smokers are at high risk for heart disease and respiratory problems, which will exacerbate symptoms due to COVID-19.

As of December 15, 2020, there have been 19,000 deaths due to COVID-19 in Indonesia with an incidence of 629,000 cases (Covid-19 Task Force, 2020). East Java is the province with the highest number of COVID-19 cases in Indonesia, with 70,000 positive cases and 4.9 thousand deaths (East Java COVID-19 Task Force, 2020). Malang is a city with a red zone or has a high risk of spreading COVID-19; there have been 2834 confirmed cases of positive COVID-19 in Malang City, with 271 deaths (East Java COVID-19 Task Force, 2020).

The COVID-19 pandemic has not changed people's habits in smoking behavior, in fact, it has tended to increase. A survey found that 13.1% of

respondents admitted that their expenses had increased due to buying cigarettes and 77.14% of respondents had an income of <5 million (Komnas PT, 2020). The purpose of people who smoke during the pandemic is to pass the time (Naresawari et al., 2020). Online learning during the COVID-19 pandemic is an option to reduce direct contact, including at the State University of Malang which causes a lack of student activity which, in turn, increases their free time. Smoking habits were chosen as one of the popular types of activities carried out to take advantage of free time for both men and women with the percentage of men dominating, at 64.80% (Juliastuti, 2006). In addition, the transition of offline learning to online quickly causes unpreparedness in adjustment and students' mental problems (Dewi, 2020). Mental health problems experienced by students in online lectures during the pandemic are difficulty focusing (65%), anxiety (30%), and insomnia as much as 5%. "Hard to focus" is the most common form of mental health disorder dominant followed by "anxiety" and difficulty sleeping.

Based on the Theory of Planned Behavior (TPB), a person's behavior can be influenced by intentions (Putri, 2018). There are three variables that can influence an intention to perform behavior, namely attitudes, subjective norms, and controlling variables/control behavior (Putri, 2018). TPB is a development from the Theory of Reasoned Action (TRA) by combining social influences and personal factors as predictors (Topa and Moriano, 2010). This theory was developed by Ajzen (1991) explaining that an action taken by a person is based on inner intentions (Ferdiansyah, 2017). This theory has been widely used by various relevant primary studies and its predictive utility has been proven for various behaviors (Topa and Moriano, 2010).

There are aspects that make up TPB in bringing about a new behavior (Asare, 2015). The first aspect is behavioral intention. Intention is the main predictor of the occurrence of a behavior because intention is a motivating factor that affects behavior (Kumalasari, 2014; Asare, 2015). The stronger a person's intention to change behavior, the greater the possibility to carry out that behavior (Asare, 2015).

In the second aspect, Ajzen (1991 in Asare, 2015) explains that an intention is influenced by three variables, including attitudes, subjective norms, and behavioral control. Attitude is a person's assessment of a behavior. Attitude assesses the extent to which a person likes or dislikes certain behaviors. Attitude consists of behavioral beliefs and evaluation results. Subjective norm comes from the social pressure felt by a person to perform or not perform a behavior. Subjective norms are a combination of beliefs and motivation to behave. Behavioral control (Perceived Behavior Control) that is felt by a person plays a key role in shaping behavior. Behavioral control completes a construct that does not exist in the Theory of Reasoned Action. This is because a person's decision to do or not to do behavior is not only determined by subjective attitudes and norms but also there is a role in one's perception of beliefs that can control the behavior itself. The purpose of this study is to analyze smoking intentions among students of the State University of Malang during the COVID-19 pandemic.

## METHODS

The type of research used is quantitative analytic through a cross-sectional approach, namely data collection in one time. This study uses primary data which was conducted by testing the relationship between the independent variables, namely attitudes (positive attitude, neutral attitude, and negative attitude), subjective norms (high, moderate, and low), and behavioral control (high, moderate and low) with the independent variable, namely the intention (positive intention and negative intention) to quit smoking.

Data collection was using a questionnaire instrument which was distributed online to students at the State University of Malang via Google Forms. The questionnaire contained questions regarding the variables studied and was filled out independently by the

respondents. Before being used in data collection, the result of the instrument was tested for validity and reliability. The Result R count > from R table, with R count 0.879 for the Attitude variable, with R count 0.868 for the subjective norm variable, and with R count 0.879 for the behavioral control variable. In the reliability test, the results of the R count show all variables above 0.6 so it is said to be reliable. This research has received ethical approval from the Ethics Committee of Health Research. The research population is Malang State University smoking students who are still actively involved in online learning during the COVID-19 pandemic. The research sample of the population was taken using a non-random sampling technique of purposive sampling total of 100 students. The criteria used in the selection of the research sample are active students at the State University of Malang (class of study 2018 and 2019), students who smoke (last 6 months), and are willing to be respondents.

The data analysis method was carried out using quantitative analysis techniques which included data tabulation, statistical calculations, and statistical tests. Statistical analysis used in this study included univariate analysis, bivariate analysis, and multivariate analysis. The statistical test used was the Chi-Square test for bivariate and the Logistics Regression test with a significance limit of = 0.05 or 95% confidence interval (CI). Before taking data, this research went through an ethical review with certificate number Reg.No.:157 / KEPK-POLKESMA / 2021.

## RESULTS AND DISCUSSION

### Characteristics of Respondents

This study used 100 respondents from the State University of Malang. Regarding the characteristics of the respondents, the results of the analysis are presented in the form of a frequency distribution table.

**Table 1. Characteristics of Respondents.**

Characteristics	Frequency	%
<b>Gender</b>		
Man	85	85
Woman	15	15
<b>Student Activities</b>		
Only active in lectures	58	58

Characteristics	Frequency	%
Join 1 student organization	22	22
Join >1 student organization	20	20
<b>Pocket money (per week)</b>		
IDR 0 - IDR 500.000	89	89
IDR 500.001 - 1.000.000	8	8
>IDR. 1.000.000	3	3
<b>Cigarette Consumption</b>		
10 sticks/day	77	77
11-20 sticks/day	22	22
21-30 sticks/day	0	0
31 sticks/day	1	1
<b>Total</b>	<b>100</b>	<b>100</b>

Based on Table 1, it is known that the majority of the 100 respondents who filled out the male gender were 85 students (85%) and the remaining 15 students (15%) were female. Most of the smoking students who filled out the questionnaire were only active in lecture activities with a frequency of 58 students (58%). However, some other students also usually have extra activities such as participating in organizations or other campus activities. A total of 22 students (22%) only participated in one organizational activity on campus and 20 students (20%) participated in >1 organizational activity on campus.

#### Theory of Planned Behavior in Intentions to Quit Smoking

Frequency distribution is done to see the number and percentage of variables categorized based on the operational definition of the research. The following are the results of a descriptive analysis based on aspects of the Theory of Planned Behavior in Intentions to Quit Smoking.

**Table 2. Frequency Distribution of Theory of Planned Behavior in Intentions to Quit Smoking.**

Characteristics	Frequency	%
<b>Attitude</b>		
Positive Attitude	6	6
Neutral Attitude	73	73
Negative Attitude	21	21
<b>Subjective Norms</b>		
High	27	27
Moderate	71	71
Low	2	2
<b>Behavioral Control</b>		
High	37	37
Moderate	57	57
Low	6	6
<b>Intention to Quit Smoking</b>		

Positive Intention	43	43
Negative Intention	57	57
<b>Total</b>	<b>100</b>	<b>100</b>

The total respondents, as many as 89 students (89%) every week get pocket money with a range of IDR.0-500,000. Meanwhile, eight students (8%) get pocket money in the range of IDR 500,001-100,000 per week. Only three students (3%). According to Trisanti (2016), there are four categories of smokers when viewed from the number of cigarettes consumed. The majority of respondents belong to the light category ( $\leq 10$  cigarettes/day) as many as 77 students (77%). There are 22 students (22%) who smoke moderately (11-20 cigarettes/day), one student (1%) is a smoker very heavy ( $\geq 31$  cigarettes/day), and there were no students who were heavy smokers (21-30 cigarettes/day). According to Table 2, it is known that most of the 100 respondents have sufficient attitudes (73 students or 73%) regarding the dangers of smoking during the current COVID-19 pandemic. Most of the other respondents had poor attitudes (21 students or 21%) and only a few had good attitudes (6 students or 6%). On the subjective norm variable, 71 students (71%) had sufficient subjective norms and 27 students (27%) had good subjective norms. In contrast to the attitude variable, only a few respondents had less subjective norms on smoking behavior during the pandemic, namely two students (2%). For the behavioral control variable as well as the previous two variables, most of the respondents had sufficient behavioral control, as many as 57 students (57%).

Respondents who have good behavioral control are 37 students (37%) with respondents with less behavioral

control as many as six students (6%). Based on the results of the study in Table 2, for the variable of intention to stop smoking students at the State University of Malang, it is known that the majority of students at the State University of Malang do not intend to stop smoking during the COVID-19 pandemic while at home, as many as 57 students (57%) and who intend to quit smoking as many as 43 students (43%).

#### Bivariate Analysis

The bivariate test of the results of this study was analyzed using cross-tabulation between attitudes, subjective norms, behavioral control, and intention to quit smoking. A bivariate test was conducted to see the relationship between the independent variable and the dependent variable.

In Table 3, it is known that most of the respondents who have sufficient attitudes do not intend to stop smoking. Based on the test results between the attitude variable and the intention to quit smoking, the significance value obtained was 0.03 ( $<0.05$ ), indicating that there is a relationship between attitude and intention to quit smoking.

Attitude is a person's belief in the consequences he will get if he performs a behavior either in a positive or negative form (Ajzen, 1991). Other studies have also stated that attitudes have a relationship with smoking cessation intentions among adolescents in China (Xu et al., 2015). The attitude of the embodiment of ideas is related to emotions so it will encourage someone to make certain decisions/actions in social situations (Riyadi, 2020).

**Table 3. Cross-tabulation of Attitude with Intention to Quit Smoking.**

Category	Intention to Quit Smoking				Total	
	+		-		n	%
	n	%	n	%		
Well	4	4	2	2	6	6
Enough	35	35	38	38	73	73
Not enough	4	4	17	17	21	21
Total	43	43	57	57	100	100

Sig=0.03

Students with negative attitudes will tend to have distrust of the dangers of consuming cigarettes during the COVID-19 pandemic. This negative attitude can support someone to continue to have the intention to smoke (Blankers et al., 2016). Attitudes are influenced by one's assumptions about cigarettes; if a smoker

assumes that cigarettes are beneficial, then he does not have the intention to stop smoking, which tends to encourage him to continue smoking behavior (Atmojo, Soemanto and Murti, 2017; Pandayu, Murti and Pawito, 2017).

#### Relationship between Subjective Norms and Intentions to Quit Smoking

The results of the analysis in Table 4 show that most of the respondents who have subjective norms do not have the intention to quit smoking. The Chi-Square test conducted between the attitude variable and the intention to quit smoking obtained a significance value of 0.077 ( $>0.05$ ), indicating that there is no relationship between subjective norms and the intention to quit smoking.

**Table 4. Cross-tabulation of Subjective Norms with Intentions to Quit Smoking.**

Category	Intention to Quit Smoking				Total	
	+		-		n	%
	n	%	n	%		
Well	16	16	11	11	27	27
Enough	27	27	44	44	71	71
Not enough	0	0	2	2	2	2
Total	43	43	57	57	100	100

Sig=0.077

Smokers who have subjective norms and good intentions to quit smoking tend to be in the young age group (adolescents), start smoking at a young age, have a low level of education, and fall into the category of light smokers or consume low amounts of cigarettes a day (Tapera et al., 2020). When viewed in the category of respondents, it is reasonable that subjective norms have no relationship with the intention to stop smoking, because the respondents taken in this study were students with a high level of education and age who were included in the category of young adults.

A person's subjective norms are influenced by social norms and social pressures he feels, the greater the social norms and pressures received by smokers, the more they will be moved to perform a behavior, including smoking cessation behavior (Atmojo, Soemanto and Murti, 2017; Riyadi, 2020). Young adults or college students may experience significant changes in social relationships because they do not have much time together (Lee et al., 2018). We know that, during the COVID-19

pandemic, the government imposed a policy of social restrictions, so that smoking students did not have time to interact with their social environment.

**The Relationship of Behavioral Control with Intention to Quit Smoking**

The results of the analysis in Table 5 show that the majority of respondents who have sufficient behavioral control will not have the intention to stop smoking. Based on the results of the Chi-Square test conducted between the attitude variable and the intention to quit smoking, a significance value was obtained at 0.00 (<0.05), indicating that there is a relationship between behavioral control and intention to quit smoking.

**Table 5. Cross-tabulation of Behavioral Control with Intention to Quit Smoking.**

Category	Intention to Quit Smoking				Total	
	+		-			
	n	%	n	%	n	%
Behavioral Control Well	2	2	9	9	3	3
	8	8			7	7
Enough	1	1	4	4	5	5
	4	4	3	3	7	7
Not enough	1	1	5	5	6	6
Total	4	4	5	5	1	1
	3	3	7	7	0	0
					0	0

Sig=0.00

Behavioral control is a belief held by individuals about the support or obstacles for someone to carry out healthy behavior (Atmojo, Soemanto and Murti, 2017). This belief can come from information obtained, previous experience, or by observing oneself or the people around them (Ajzen, 1991; Atmojo, Soemanto and Murti, 2017). Someone who has good behavioral control can control the intention to smoke when offered by a friend who smokes. This can happen if he is not involved in the sale and purchase of cigarettes. In addition, behavioral control can be influenced by the circle of friends, education level, age at first smoking, and type of smoker (number of cigarettes consumed) (Tapera et al., 2020).

**Multivariate Analysis**

Multivariate analysis was conducted to determine the effect of the attitude and behavioral control variables on the intention to quit smoking.

**Table 6. Regression Test Results of the Effect of Attitude and Behavioral Control on Intention to Quit Smoking.**

Independent Variable	Dependent variable	Sig	Description
Attitude	Intention to Quit Smoking	0.258	No effect
Behavioral Control		0.00	Take effect

**Influence of Attitude and Behavioral Control with Intention to Quit Smoking**

Based on the results of the logistic regression test shown in Table 6, it is known that only behavioral control variables have a significant effect on a person's intention to quit smoking. The magnitude of the influence of the behavioral control variable on the intention to quit smoking can be seen by looking at the significance value obtained, which is 0.00 (<0.05). Meanwhile, the attitude variable does not have a significant effect on the intention to quit smoking. It can be seen from the significance value of the attitude variable that is equal to sig. 0.256 (>0.05).

The Theory of Planned Behavior in theory has succeeded in predicting and explaining various health behaviors including smoking behavior. Behavioral control is a strong factor in determining a person's intention to continue smoking/quitting smoking which is influenced by individual perceptions of his abilities which include internal perceptions (e.g. skills) and external perceptions (e.g. constraints) (Tapera et al., 2020). So that students' beliefs and perceptions of cigarettes will be a reinforcement for them to have the intention to stop smoking.

Based on the results of research that behavioral control plays an important role in students' smoking cessation intentions, an approach that can be taken as an effort to stop smoking can be through a stimulus that allows students to control their smoking desire, such as providing a better understanding that the impact of smoking can worsen the situation when exposed to COVID and provide examples of cases related to smoking activities during the pandemic as well as managing and interpreting that smoking behavior can later increase the risk of other diseases due to COVID-19. Behavioral control itself is also supported by control belief, the extent to which a student understands that smoking will have a bad impact on health in the present and in the future. Besides that, is

the extent to which a student can control their smoking habits or behavior when they are in an environment of smokers or non-smokers. So it can be said that the desire to smoke in college students has multiple factors that can support the intention to stop smoking or even inhibit the intention to stop smoking.

The implications of the research results can be seen in that, although the State University of Malang has implemented the Health Promoting University program and has a smoking-free campus policy, there are still many of our students who have sufficient intentions to quit smoking. As such, the results of this study can be used as consideration for policymakers to oversee the implementation of smoke-free campuses. It may not only be enough to provide a sign prohibiting smoking in various places but also to provide sanctions to violators as well as rewards to the community who have succeeded in developing smoke-free areas within the scope of their work units.

The limitations of the research are that there is still no direct control in filling out online questionnaires and self-reporting and the research sample has not been expanded to other university community members such as lecturers and teaching staff. This might change the findings.

## CONCLUSION

Based on three aspects of the Theory of Planned Behavior, namely attitudes, subjective norms, and behavioral control of state university students, Malang State University is included in the sufficient category. Only attitude and behavioral control have a significant relationship with students' intention to quit smoking. Behavioral control is an aspect that has a significant influence on the intention to quit smoking at the State University of Malang during the COVID-19 Pandemic.

Malang State University has developed a Health Promoting University, which is expected to be more optimal in creating a smoke-free campus policy for its academic community and creating a supportive environment for smoking cessation programs for all of its academic community.

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