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**Relationship between Knowledge and Attitude of Healthy Living with Healthy Behavior Patterns in Medical Students**

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**Abstract**

Medical students play an important role in promoting health because they are prospective doctors. Medical students are considered students who have sufficient knowledge and skills about a healthy lifestyle and have a positive attitude towards health. In fact, there are still many medical students who have not implemented a healthy lifestyle. The purpose of this study was to determine the relationship between knowledge and healthy living attitudes with healthy living behavior patterns in FK–UWKS students class 2018. The study used an observational quantitative approach with a cross-sectional study design with 150 respondents taken using the census method (total sampling). analysis technique using spearman rank test. The results showed that the level of knowledge of healthy living was quite high at 78.1% and positive attitudes about healthy living was 54.7%, while having unhealthy behavior patterns was 92.2%. The Spearman rank test showed that there was a relationship between knowledge of healthy living with healthy living behavior patterns  $p = 0.000$  and a healthy lifestyle also had a relationship with healthy lifestyle behaviors  $p = 0.000$ . The conclusion of this study is that the pattern of healthy living behavior is not only influenced by knowledge but also by a healthy attitude.

**Keywords:** Healthy Lifestyle, Healthy Lifestyle Behavior, Knowledge of healthy living

**Original Research Article**

**Hubungan antara Pengetahuan dan Sikap Hidup Sehat dengan Pola Perilaku Sehat pada Mahasiswa Kedokteran**

**Abstrak**

Mahasiswa kedokteran berperan penting dalam mempromosikan kesehatan karena dirinya adalah calon dokter. Mahasiswa kedokteran dianggap

*mahasiswa yang memiliki pengetahuan dan keterampilan yang cukup tentang pola hidup sehat dan memiliki sikap positif terhadap kesehatan. Faktanya, masih banyak mahasiswa kedokteran yang belum menerapkan pola hidup sehat. Tujuan penelitian ini mengetahui hubungan pengetahuan dan sikap hidup sehat dengan pola perilaku hidup sehat pada mahasiswa FK–UWKS angkatan 2018. Penelitian menggunakan pendekatan kuantitatif observasional dengan desain cross-sectional studi dengan 150 responden yang diambil menggunakan metode*

*sensus (total sampling). teknik analisis menggunakan uji spearman rank. Hasil penelitian menunjukkan tingkat pengetahuan hidup sehat cukup tinggi 78,1% dan sikap positif mengenai hidup sehat 54,7%, sementara memiliki pola perilaku tidak sehat 92,2%. Uji spearman rank menunjukkan adanya hubungan pengetahuan hidup sehat dengan pola perilaku hidup sehat  $p=$*

*0,000 dan sikap hidup sehat juga ada hubungan dengan pola perilaku hidup sehat  $p= 0,000$ . Simpulan penelitian ini pola perilaku hidup sehat tidak hanya dipengaruhi oleh pengetahuan tapi juga sikap hidup sehat.*

**Kata Kunci:** *Pengetahuan hidup sehat, Pola Perilaku Hidup Sehat, Sikap Hidup Sehat*

## **INTRODUCTION**

In the 21<sup>st</sup> century half of the number of deaths in the world that occur are caused by lifestyle: such as attitudes and unhealthy living. Several studies have shown that most medical students do not behave properly and are healthy (Askarian et al., 2013).

Medical students play an important role in advancing health because they are prospective doctors (Alzahrani et al, 2019). Promoting a healthy lifestyle is an important determinant of health and is considered a major factor in maintaining and improving health. In general, medical students are considered as students who have sufficient knowledge and skills about a healthy lifestyle and have a positive attitude towards health, so they tend to be "models" related to health. In fact, many medical students have not implemented a healthy lifestyle (Almutairi et al., 2018).

Lifestyle is a way or habit or lifestyle that can be considered healthy or unhealthy depending on personal behavioral choices (Almutairi *et al.*, 2018). A healthy lifestyle is a lifestyle that cares about things that can affect health, such as food and exercise (Sinaga dan Eko, 2019). A healthy lifestyle can contribute to better mental health (Maenhout *et al.*, 2020). Healthy lifestyle behavior is also defined as all behaviors that are believed and applied by individuals to be healthy, maintain health and avoid disease (Çelebi *et al.*, 2017). Healthy lifestyle behavior aims not only to prevent an illness or disease but also to bring a person's general health to better level (Bozlar dan Arslanoğlu, 2016).

So far, students still lack healthy lifestyle behaviors. Behaviors such as often sleeping late at night, eating carelessly, lack of exercise and various other bad activities (Soekanto, 2017). Students also tend to choose to stay sitting for long in front of a computer or laptop to surf in cyberspace with the excuse of looking for study reference materials or just for entertainment. This activity causes the limbs to move less. As a result,

physical fatigue occurs, which in the end will interfere with health (Istiningtyas, 2010).

The results of Heidari et al. (2017), showed that 22.88% of college students were rated poorly in the Midwest of the United States. The results of the research by Sihombing and Pratama (2018) on students of the Faculty of Nursing and Health Sciences at universities in the western part of Indonesia show that more than half (59.8%) of students have unhealthy lifestyle patterns. Similar results were shown by Sitorus (2020) regarding the healthy lifestyles of high school students of health sciences in Bandung showing a poor healthy lifestyle by 57%

According to Hendrik L. Blum, health status is influenced by 4 factors: heredity, environment, behavior, and health services. Behavioral factors relate to individual or community behavior (Notoatmodjo, 2014). According to Benjamin Bloom (1908), human behavior is divided into three domains, namely cognitive (knowledge), affective (attitude), and psychomotor (action). According to Istiningtyas (2010), factors that can influence changes in healthy lifestyle behavior are the low knowledge of medical students about a healthy lifestyle and a lack of understanding about the application of a healthy lifestyle

Knowledge is one of the factors to facilitate the formation of behavior. Knowledge is the result of "knowing" and this occurs after people have sensed a certain object. Knowledge or cognitive is a very important domain for the formation of one's actions (overt behavior) (Notoatmodjo, 2014). A person's level of knowledge influences him to have a healthy lifestyle. Knowledge of healthy living behavior patterns is important for medical students to obtain information about healthy living habits and methods so as to have a changing effect on their health behavior patterns (Sihombing dan Pratama, 2018). The results of Istiningtyas (2010) show that there is a relationship between knowledge about healthy lifestyles and healthy lifestyle behaviors of students at PSIK Undip Semarang. Research Askarian et al. (2013), there was a significant

correlation between medical student knowledge and healthy lifestyle behavior ( $P < 0.05$ ).

Healthy living attitudes can also be related to healthy lifestyle behaviors. Attitude is an urge to respond or act positively or negatively towards an object or person accompanied by positive or negative emotions. The better the attitude and behavior, the more aware the individual is for healthy lifestyle behavior (Sulastriningsih et al., 2020). A positive attitude produces a healthy life behavior because a person will easily absorb information, advice and advice and know the good, bad, impact and benefits of a behavior. A negative attitude leads to unhealthy behavior because with a lack of understanding, a person will tend to think and assume to try and do something that he does not know (Istiningtyas, 2010). The results of Sitorus (2020) on STIK Immanuel students showed that students' negative attitudes towards a healthy lifestyle were quite high, namely 57% Sulastriningsih et.all. (2020) shows that there is a relationship between attitude and healthy lifestyle behavior. A positive attitude has a 4.2 times chance of having a healthy lifestyle compared to respondents with a negative attitude.

Assessing the healthy lifestyle behaviors of health science professional students is very important so that early intervention can be applied to improve outcomes. This is because students tend to lead unhealthy lives, because the majority of them have unhealthy eating habits and poor levels of physical activity. The behavior of healthy lifestyles in health students is still lacking. This can be due to a narrow perspective on the

information received about a healthy lifestyle. So that research is needed to examine factors related to healthy lifestyle behavior of students. Therefore, the general purpose of this study was to determine the relationship between knowledge and attitudes towards healthy living with healthy living behavior patterns in FK-UWKS students batch 2018.

### MATERIAL AND METHODS

The research uses an observational quantitative approach with a cross-sectional study design, which is an approach to a study in which data concerning independent variables or risk and dependent variables will be collected at the same time which is momentary in nature and is not followed continuously in a certain period of time (Notoatmodjo, 2012). The population used in this study were Faculty of Medicine, Wijaya Kusuma Surabaya batch 2018 Student in the city of Surabaya, as many as 150 people who met criteria such as: willing to answer the questionnaire and fill out the informed consent. In this study, the sampling technique used was "total sampling" where the sample studied were all 150 students of Faculty of Medicine, at Surabaya Who met the research criteria. The statistical test used is Spearman Rank. According to Sugiyono (2018): "Spearman Rank correlation is used to find a relationship or to test the significance of the associative hypothesis if each of the variables connected is ordinal, and the data sources between variables do not have to be the same"

**Table 1.** Questionnaire grid Healthy attitude living

Faktor	Indikator	Item
Opinion or beliefs about a healthy life style	a. Diet	1. I think breakfast is not important
		2. I think I eat when I feel hungry
	b. Rest	3. I think sleep is good after 9 pm.
		c. exercise
Evaluation of healthy living	a. Diet	1. I prefer to eat fibrous foods; fruits and vegetables rather than eating various types of fast food
		2. I don't worry about eating sweet foods every day
		3. I prefer to take a nap even if it's only 15 minutes
		4. I prefer hobbies like watching and reading books than exercising
	b. Rest	
	c. Exercise	
	Tendency to act	a. Diet
2. I don't worry about eating sweet foods every day		
3. I prefer to finish the task/work rather than having to sleep even though it's late at night.		
4. I prefer to play games/gadgets at home rather than doing activities outside the house		
b. Rest		
c. Exercise		

Score for each answer refers to: Strongly disagree (SD): 1,

Disagree (DA): 2, Agree (A): 3, Strongly Agree (SA): 4. After that find the mean/median.

## RESULTS

The Questionnaire tabulated based on knowledge, healthy behavior and healthy living attitudes in respondents. The distribution of each indicators showed in Table 2, 3 and 4.

**Table 2.** Distribution of Knowledge on Healthy Living for FK-UWKS students batch 2018

Knowledge	Amount (n)	Percentage (%)
Low	28	21,9%
High	100	78,1%
Total	128	100%

Source: Questionnaire Results Processed 2021

Based on Table 2, it can be seen that most of the respondents have high knowledge, namely 100 (78.1%) of 128 respondents.

**Table 3.** Distribution of Healthy Living Attitudes of FK-UWKS Students batch 2018

Attitude	Amount (n)	Percentage (%)
Negative	58	45,3%
Positif	70	54,7%
Total	128	100%

Source: Processed Questionnaire Results 2021

Based on Table 3, it can be seen that most of the respondents were positive as many as 70 people (54.7%).

**Table 4.** Distribution of Healthy Behavior Patterns for FK-UWKS Students batch 2018

Healthy Behavior Pattern	Amount (n)	Percentage (%)
Un healthy	118	92,2%
healthy	10	7,8%
Total	128	100%

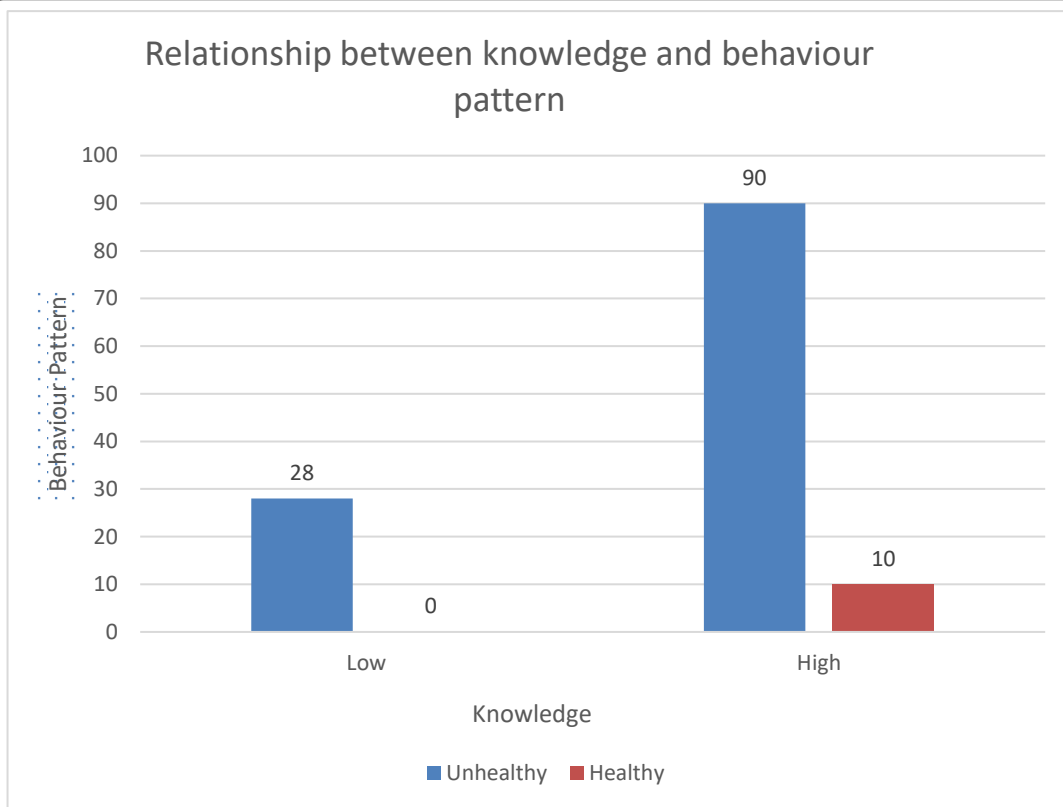
Source: Processed Questionnaire Results 2021

Based on Table 4, it can be seen that most of the respondents have unhealthy behavior patterns as many as 118 people (92.2%).

Based on table 5, it is known that from 128 students who have low knowledge as many as 28 people (100%) with unhealthy behavior patterns while there are no students who have low knowledge with healthy behavior patterns. This means that there are 100% (28 students) who have low knowledge with unhealthy behavior patterns, while there are 100 students in the high knowledge group who have unhealthy behavior patterns as many as 90 people (90%), while only 10 people have healthy behavior patterns (10%).

**Table 5.** The Relationship of Knowledge of Healthy Living with Patterns of Healthy Life Behavior  
Source: Questionnaire results processed

Knowledge of healthy living	Healthy Behavior Pattern				Total		Spearman Rank
	Un healthy		Healthy		N	%	
	N	%	N	%	N	%	
Low	28	24	0	0	28	100	Value = 0,605 Sig. = 0,000
High	90	76	10	10	100	100	
Total	118	100	10	7,8	128	100	



**Figure 1.** Relationship of Knowledge with Healthy Lifestyle Behavior

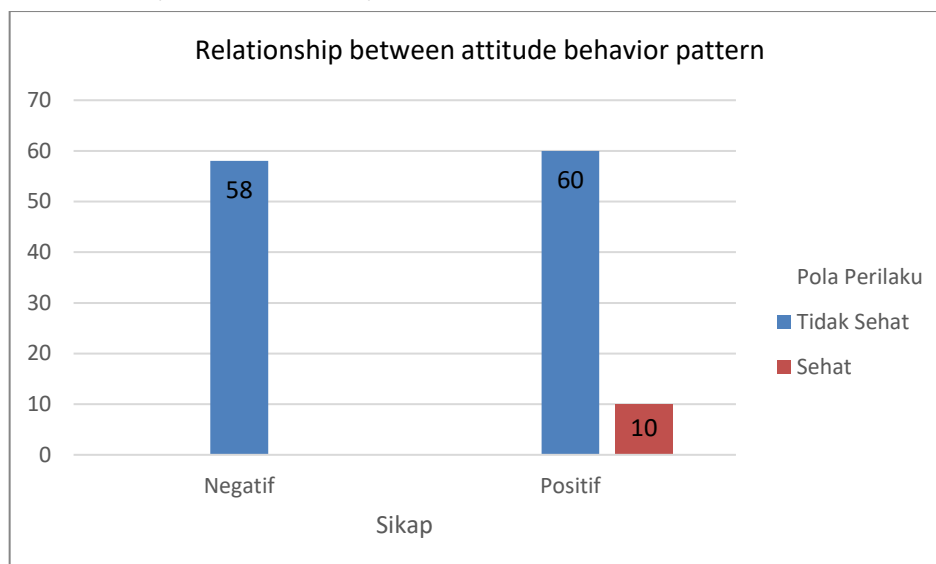
The results of the Spearman rank test show that there is a relationship between knowledge of healthy living and patterns of healthy living behavior in FK-UWKS 2018 students. This is proven by the sig value at the time of the Spearman rank test of 0.000 (< 0.05). With a correlation

coefficient value of 0.605, it is included in the strong (close) category. This shows that there is a strong relationship between knowledge of healthy living and healthy living behavior patterns in FK-UWKS 2018 students.

**Table 6.** Healthy Life Attitudes with Healthy Life Behavior Patterns

Attitude	Behavior pattern				Total		Spearman Rank
	Unhealthy		healthy		N	%	
	N	%	N	%			
Negative	58	100	0	0	58	100	Value = 0,547 Sig. = 0,000
Positive	60	85,7	10	14,3	70	100	
<b>Total</b>	<b>118</b>	<b>92,2</b>	<b>10</b>	<b>7,8</b>	<b>128</b>	<b>100</b>	

Source: Questionnaire results processed 2021



**Figure 2.** The Relationship between Attitudes and Healthy Life Behavior Patterns

Based on table 6, it is known that out of 128 students who have negative attitudes, 58 people with unhealthy behavior patterns, while those with healthy behavior patterns do not exist. There were 60 students (85.7%) with unhealthy behavior patterns, while students with healthy behavior patterns were only 10 people (14.3%).

The results of the spearman rank test show that there is a healthy life attitude with a healthy lifestyle behavior in Faculty of Medicine, Wijaya Kusuma Surabaya batch 2018 Student. This is proven by the sig value at the time of the Spearman rank test of 0.000 ( $< 0.01$ ). With a correlation coefficient value of 0.547, it is in the medium category (close enough). This shows that there is a moderate (quite close) relationship between healthy living attitudes and healthy living behavior patterns in FK-UWKS 2018 students.

## DISCUSSION

There is a relationship between knowledge of healthy living and healthy living behavior patterns in FK-UWKS 2018 students. This is proven by the sig value during the Spearman rank test of 0.000 ( $< 0.05$ ). With a correlation coefficient value of 0.605, it is included in the strong (close) category. This shows that there is a strong relationship between knowledge of healthy living and healthy living behavior patterns in FK-UWKS 2018 students.

In line with the opinion of Hoffmann dan Lutz (2019) also argue that a high level of health knowledge in turn is positively related to a healthy lifestyle. According to Askarian et al. (2013) knowledge automatically creates the desired behavior change. Health professionals and health

education programs should raise awareness of healthy lifestyle behaviors that enable people to apply this knowledge in their daily lives. Therefore, the goal of health policy should be to promote health knowledge in students. The results showed that there was a significant correlation between knowledge and the participants' healthy lifestyle behavior.

This result is the same as the research by Ahmadi dan Roosta (2015) showing a significant relationship between health knowledge and a Healthy Lifestyle (HPLS. Istiningtyas (2010) also shows that there is a relationship between knowledge about healthy lifestyles and healthy lifestyle behaviors of students at PSIK Undip Semarang. Supported by research Askarian et al. (2013), there was a significant correlation between medical student knowledge and healthy lifestyle behavior ( $P < 0.05$ ). These results are not the same as those of Sinaga and Eko (2019), Sulastriningsih et al. (2020) that knowledge of healthy living has no effect on healthy living behavior patterns.

Knowledge of healthy living behavior patterns is important for medical students to obtain information about the requirements and methods of healthy living so as to have a changing effect on their health behavior pattern (Sihombing dan Pratama, 2018). This result is possible because respondents who are highly educated (students) will easily absorb information, so that their knowledge is higher, on the contrary, respondents with low education will experience obstacles in absorbing information so that their knowledge is also lower which has an impact on their lives. The results of the description show that most students

have high knowledge of healthy living 78.1%, while students with low knowledge of healthy living are 21.9 out of a total of 128 respondents. The results of this study are in line with the research of Ahmad et al. (2011) that in general, research shows that students at UniMAP, UUM and UiTM have an adequate level of knowledge about healthy lifestyles.

In this study, the characteristics of the respondents were dominated by 58.6% male and 41.4% female. Through this research, it shows that there is a tendency that men place more emphasis on the important thing being not sick and feeling full enough, on the contrary, women place more emphasis on relaxation, feeling healthy, rest and nutrition. This makes women more careful in maintaining their health compared to men.

The results of the cross tabulation confirm that there are 93.3% of men who have an unhealthy lifestyle, only 6.7% have a healthy lifestyle. Meanwhile, 90.6% of women have unhealthy lifestyles and 9.4% have healthy lifestyles. The results of this study are in line with the research of Eko dan Sinaga (2018) men tend to have an unhealthy lifestyle more than women. This is because men are more likely to emphasize the state of not being sick while women are more focused on relaxation, feeling healthy, rest and nutrition. This makes women more careful in maintaining their health. Therefore, it can be seen that gender can affect a person in having a healthy lifestyle.

Thus, women are more concerned with healthy lifestyles than men. The underlying factors include the level of concern for health, for example, women generally have less smoking habits, consume large amounts of alcohol, engage in regular exercise, are more likely to monitor their diet, and are involved in body and dental care. Another factor is risky behavior, men generally tend to carry out risky aggressive actions more often than women even though they have a high knowledge of healthy living.

This result also shows that the majority (56.3%) of the respondents have the status of Rent/Kos without or away from their families, amounting to 72 respondents out of a total of 128 respondents. Reinforced cross tabulation results show that respondents who rent/board without family have unhealthy behavior patterns as much as 93.1% and those with families with unhealthy behavior patterns as much as 91.1%. Meanwhile, respondents who are with their families with

healthy behavior patterns are 8.9%, while those who rent/board without family are 8.9%. This means that respondents who are with their families in terms of quality and duration of eating are more regular and secure than those who rent or board. In addition, the role of family or parents can control healthy living behaviors such as eating more regularly, including the nutritional content. Families or parents can provide education and supervision of students in carrying out a healthy lifestyle, so as to minimize actions or behaviors that tend to be unhealthy, such as smoking, drinking alcohol, playing games and others.

Based on the results of the Spearman rank test, it shows that there is a relationship between healthy living attitudes and healthy living behavior patterns in FK-UWKS 2018 students. This is evidenced by the sig value at the time of the Spearman rank test of 0.000 ( $< 0.05$ ). With a correlation coefficient value of 0.547, it is in the medium category (close enough). This shows that there is a moderate (quite close) relationship between healthy living attitudes and healthy living behavior patterns in FK-UWKS batch 2018 students.

These results are similar to those of Petrash et al. (2019) shows that attitudes can affect a healthy lifestyle. Similar to the research of Sulastriningsih et al. (2020) shows that there is a relationship between attitude and healthy lifestyle behavior. A positive attitude produces a healthy life behavior because a person will easily absorb information, advice and advice and know the good, bad, impact and benefits of a behavior. Similar to the research of Askarian et al. (2013) that the attitude of medical students has an influence on their healthy lifestyle behavior. A negative attitude leads to unhealthy behavior because with a lack of understanding, a person will tend to think and assume to try to do something that he does not know. Such behavior includes drinking, smoking and narcotics which are clearly harmful to their own health.

This is possible with a positive attitude has a chance of a healthy lifestyle behavior compared to respondents who have a negative attitude. The results of the description show that most students have a positive attitude about healthy living 54.7%, while students with a negative attitude about healthy living are 45.3% of the total 128 respondents. The results of this study support the research of Sulastriningsih et al. (2020) that 90.7% (49 respondents) with a positive attitude have a

healthy lifestyle, and 69.3% (27 respondents) who have a negative attitude also have a healthy lifestyle. Ahmad et al. (2011) in his research shows that students have a positive attitude towards the practice of a healthy lifestyle

The findings that attitudes have a fairly close relationship to healthy living behavior patterns in FK-UWKS batch 2018 students are based on the condition that most students have positive attitudes about healthy living 54.7%, while students with negative attitudes about healthy living are 45.3%. Factors that influence the positive attitude of these students can be due to the experience gained from practice in various health service centers, mass media / supporting facilities such as libraries and the internet in the campus area as well as educational institutions and religious institutions. For educational institutions, there is no need to question it because PSIK is one of the health institutions that provides knowledge and teaches how to live a healthy life, while religious institutions provide a positive attitude because it teaches to avoid bad things such as alcohol and narcotics in accordance with the principles of life. healthy.

On the other hand, there are still some students who have a negative attitude towards a healthy lifestyle. Health attitudes are modulated by sex, indicating that male medical students are more likely to have negative attitudes by 48% than female students by 41.5%. Female students displayed a healthier profile overall, exercised more and managed stress better than male students. This shows that men have a low responsibility for health so that it has an impact on unhealthy behavior patterns. This illustrates that boys tend to be practical by using their free time by playing games, eating fast food or simply eating instant noodles, while female students tend to adopt daily self-care habits and fulfill their nutritional needs, for example by cooking themselves with healthy food.

This can be due to the influence of people who are considered important and emotional factors. From this study, it was found that most of the students were far from their parents (56.3%). This greatly affects students in acting and responding to a response because the first and foremost attitude education is from the family (including parents), so that students feel free and not supervised by their parents. In addition, sometimes attitude is a release of emotion as a channel of frustration or a diversion of the ego's defense mechanism. It is possible that when filling

out the questionnaire, respondents prefer to play games/gadgets at home rather than doing activities outside the home, thus affecting their attitude.

This is supported by a low pattern of healthy living behavior because most of the 2018 FK-UWKS students are boarding children whose lives are far from their families and free from parental supervision so that their habits of eating, resting and doing activities are less controlled. In addition, friends and their environment who are both boarding children are contributing factors to unhealthy behavior, because of the tendency to do bad habits in order to maintain the prestige between friends such as smoking, laziness and other unhealthy behaviors. The results of the cross tabulation show that respondents who have a positive attitude towards a healthy lifestyle with unhealthy behavior patterns are 85.7% greater than respondents who have a positive attitude towards a healthy lifestyle with a healthy lifestyle that is 14.3%. This explains that behavior arises as a result of several things, including because of the reciprocal relationship between stimulus and response, which is better known as response stimulus. The relationship between stimulus and response will form new behavior patterns. In addition, the relationship between stimulus and response is a mechanism of the learning process from the outside environment that also affects a person's behavior. A person's attitude will affect the quality of one's own life. A positive attitude will also have a positive impact on healthy living behavior patterns. This shows that the role of family or parents can encourage a positive attitude so that it has an impact on healthy living behavior patterns as well.

The results of the cross tabulation show that respondents who live with their parents have a smaller negative attitude in healthy life (41.1%) compared to respondents who rent/board a boarding house without a family having a percentage of 48.6%. This explains that students who do not live with their families have lower health responsibilities than students who live with their families. This is very possible because the transition to university can be an acute stressor due to the demands of academic responsibilities such as completing assignments such as practicum reports, new social relationships, financial pressure, and reduced support from family and friends for students who move from home. Increased stress in this transition period can reduce the individual's implementation of his



intention to engage in healthy behavior patterns. Thus, students entering university are less likely to feel responsible for their health and are more likely to engage in risky health behaviors.

This research has passed the Health Research Ethics Committee and passed the ethical clearance No. 73/SLE/FK/UWKS/2021 28 November 2021.

**CONCLUSION**

Based on the results of the tests that have been carried out, it was found that there was a strong (close) relationship between knowledge of healthy living and healthy living behavior patterns in Student of Faculty of Medicine, Wijaya Kusuma Surabaya batch 2018. As a medical student, you need to think about, plan and review your health behavior. This is important to prepare him to stay fit until the end of his studies and continue his career as a professional in the future.

**SUGGESTION**

For further research by adding other variables that can affect healthy living behavior patterns, for example the role of parents, environment, age, and playmates.

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