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Determinants of Smoking Behavior in Physical Education, Sports, and Health Teachers in Surakarta City in 2021

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ABSTRACT

Background: Smoking is an unhealthy habit but is often encountered in everyday life. Teacher of Physical Education, Sports, and Health as one of the sports actors if active smoking can impair their physical fitness. Teachers contribute to instilling health values in students and making them role models. Teachers who smoke will give students the perception that smoking behavior is a common and harmless action that is feared to affect students who are still in the period of self-discovery, unstable, and easily influenced in smoking behavior. This study aims to determine what factors influence smoking behavior in Physical Education, Sports, and Health teachers in Surakarta City.
Methods: This study was quantitative research with a cross-sectional approach and the sample was 81 Physical Education, Sports, and Health teachers using a proportionate stratified random sampling technique. The analysis of this study used univariate and bivariate analysis with the Chi-Square test.
Results: The results showed 30.9% of respondents are active smokers, and 69.1% are non-active smokers. Variables related to smoking behavior are knowledge (p=0.000), the role of the respondent as a teacher (p=0.000), perceived seriousness (p=0.000), perceived benefits (p=0.017), attitude (p=0.000), subjective norms (p=0.000), and perceived behavioral control p=0.003).
Conclusion: Knowledge, attitude, role as a teacher, perceived seriousness, perceived benefits, perceived behavioral control, and subjective norm have a relationship with smoking behavior, while age, income, cues to action, and perceived susceptibility are not related to smoking behavior.

Keywords: behavior; smoking; physical education sports and health teacher

INTRODUCTION

Smoking is an unhealthy habit but is often encountered in everyday life. World Health Organization (WHO) shows that from 2004 to 2019, Indonesia was ranked third in the world after China and India, with the number of smokers in 2019 of 61.5 million smokers[1]. Indonesia also occupied the fifth position in the world with deaths due to smoking after China, India, USA and Russia. Among these deaths are due to heart disease is the biggest contributor, such as stroke, lung cancer, Chronic Obstructive Pulmonary Disease (COPD), tuberculosis, diabetes, pneumonia, asthma, colon cancer, etc[2]. Central Java province is one of the provinces with a smoking-related mortality rate above the national average and the fifth highest after Yogyakarta, North Sulawesi, East Java, and West Nusa Tenggara, which is 108 people per 100,000 population. Some of the highest cases due to smoking in Central Java Province, namely in the city of Surakarta, include lung cancer, chronic obstructive pulmonary disease, and asthma.

Physical Education, Sports, and Health Teachers play a major role and contribute to growing health values through health education in schools. A study by Gundogdu (2012) shows that 65.2% of

Physical Education and Sports Teachers in Turkey are smokers[3]. Based on a preliminary study in Surakarta City, 23.9% of respondents were active smokers. 45.4% of respondents smoked 11-20 cigarettes per day. Besides that, 81.8% had smoked in the school environment, and 63.3% had seen a teacher smoking in the school environment. A teacher who has been caught smoking will create a perception in students that smoking behavior is a usual action and isn't harmful. In line with previous research which showed that there was a relationship between teachers' smoking status and students' smoking behavior in Indonesia[4]. It is supported by other research, which states that seeing teachers who smoke can increase the likelihood of children or adolescents smoking[5].

Physical Education, Sports, and Health Teacher who is a sports actor, if smoking will decrease his body fitness. Research by Faza et al. (2019) said cardiovascular endurance in an active sports people and non-smokers is better than in smokers[6].

Based on the description above, smoking behavior is still found among educator who still ignore the impact of smoking on themselves and the surrounding environment. Previous research used teachers in general as research subjects. Therefore, researchers specifically address physical education, sports, and health teachers as subjects because these teachers have a greater role and contribution in instilling health values through health education in schools than teachers in other subjects. Apart from that, researchers used beliefs about the extent to which the teacher accepted health threats within himself and accommodated norms where as a teacher he was a role model for his students. So therefore, the purpose of this study is to determine the determinants of smoking behavior among Physical Education, Sports, and Health Teachers in Surakarta City.

METHOD

This research is a quantitative research approach cross-sectional. The population is 461, with the criteria of being registered as an active teacher, having a working period of at least one year, and having a background in physical education, sports, and health or equivalent. As many as 81 Physical Education, Sports, and Health Teachers in Surakarta City became the sample in this study. The sampling was proportionate stratified random sampling divided into elementary, middle and high schools.

The collected data were analyzed using univariate to describe each variable and bivariate to determine the relationship between each independent variable, namely age, income, knowledge, role as a teacher, attitude, perceived susceptibility, perceived benefits, cues to action, perceived seriousness, subjective norms, and perceived behavioral control with the dependent variable namely smoking behavior using the test Chi-square.

This research has received a certificate of ethical clearance from the Health Research Ethics Commission, Faculty of Public Health, Diponegoro University, with the number 192/EA/KEPK-FKM/2021.

RESULT

Based on research on Physical Education, Sports, and Health Teachers in Surakarta City, it is known that most of the age of the respondents are in the middle adult category aged 41-60 years, namely 61.7%, and the other 38.3% are in the early adult category, namely aged 20-40 years. The income of the majority of respondents, namely 45.7%, was middle-income between Rp. 2,000,000-Rp. 4,000,000, while 44.4% of respondents were in the high-income category is > Rp. 4,000,000, and the other 9.9% were the low-income. Most of the respondents teach at the Elementary School level, namely 53.1, with educational backgrounds mostly Undergraduate 93.8%.

Based on the results of the research shown in table 1 that 30.9% of the respondents smoked, and the other 69.1% did not smoke. Every day 72% of respondents who smoke spend 1-10 cigarettes.

They started smoking at the age of 15-25 years, namely 88% of respondents, 84% first tried smoking out of curiosity, and 60% invited friends.

Most of the respondents' knowledge about cigarettes was quite good, namely 72.8%. Knowledge of good Physical Education, Sports, and Health Teachers be in line with their role in teaching health education, which field should be mastered. The role of respondents in preventing and overcoming smoking behavior was mostly high, namely 79%.

Table 1. Respondent Characteristics

Characteristics	f	%
Age		
Early Adult	31	38,3
Middle Adult	50	61,7
Income		
Low	8	9,9
Middle	37	45,7
High	36	44,4
Teaching Level		
Elementary School	43	53,1
Junior High School	18	22,2
Senior High School	20	24,7
Educational Background		
Diploma	2	2,5
Undergraduate	76	93,8
Postgraduate	3	3,7
Behavior		
Smoke	25	30,9
Don’t Smoke	56	69,1
Knowledge		
Good	59	72,8
Poor	22	27,2
Role as Teacher		
High	64	79
Low	17	21
Perceived Susceptibility		
High	43	53,1
Low	38	46,9
Perceived Seriousness		
High	63	77,8
Low	18	22,2
Perceived Benefits		
High	64	66,7
Low	27	33,3
Cues to Action		
High	45	55,6
Low	36	44,4
Attitude		
Good	65	80,2
Bad	16	19,8
Subjective Norm		
High	43	53,1
Low	38	46,9
Perceived Behavioral Control		
High	67	82,7
Low	14	17,3

Most of the respondents were known to have high perceptions of susceptibility and seriousness, namely 53.1% and 77.8%. The majority of respondents believe that the impact of smoking can threaten their health. The benefits of not smoking or staying away from smoking to reduce the adverse effects of 66.7% of respondents have a high perception. Having a high perceived benefit reinforces acting healthier with cues from the respondent. The majority of respondents have high cues to action, namely 55.6%.

80.2% of respondents have a good attitude towards smoking bans in schools. A good attitude is important to have in a teacher because it will be a reflection or role model for his students. The majority of respondents actually have a high subjective norm of 53.1%, despite having an environment that supports smoking behavior, 82.7% of respondents have self-control in smoking behavior.

Table 2. Bivariate Analysis Results

Variable	Behavior						p-value
	Smoke		Don't Smoke		Total		
	f	%	f	%	f	%	
Age							
Early Adult	10	32,3	21	67,7	31	100	0,831
Middle Adult	15	30,0	35	70,0	50	100	
Income							
Low	3	37,5	5	62,5	8	100	
Middle	15	40,5	22	59,5	37	100	0,136
High	7	19,4	29	80,6	36	100	
Role as Teacher							
High	13	20.3	51	79,7	64	100	0,000*
Low	12	70,6	5	29,4	17	100	
Knowledge							
Good	9	15,3	50	84,7	59	100	0,000*
Poor	16	72,7	6	27,3	22	100	
Perceived Susceptibility							
High	10	23,3	33	76,7	43	100	0,115
Low	15	29,5	23	60,5	38	100	
Perceived Seriousness							
High	12	19,0	51	81,0	63	100	0,000*
Low	13	72,2	5	27,8	18	100	
Perceived Benefits							
High	12	22,2	42	77,8	54	100	0,017*
Low	13	48,1	14	51,9	27	100	
Cues to Action							
High	14	31,1	31	68,9	45	100	0,957
Low	11	30,6	25	69,4	36	100	
Attitude							
Good	14	21,5	51	78,5	65	100	0,000*
Bad	11	68,8	5	31,3	16	100	
Subjective Norm							
High	21	48,8	22	51,2	43	100	0,000*
Low	4	10,5	34	89,5	38	100	
Perceived Behavioral Control							
High	16	23,9	51	76,1	67	100	0,003*
Low	9	64,3	5	35,7	14	100	

Description : * (significant)

Based on the results of the analysis, there are seven variables significantly related to the behavior of smoking, namely the knowledge variable with a value of p = 0.000; role as a teacher with a value of p = 0.000; perceived seriousness with a value of p = 0.000; perceived benefits with a value of p = 0.017; attitude with a value of p = 0.000; subjective norm with a value of p = 0.000; and perception of behavioral control with a value of p = 0.003. The other four variables have no relationship with smoking behavior, namely the age variable with a value of p = 0.831; income with a value of p = 0.136; perception of susceptibility with a value of p = 0.115; and cues to action with a value of p = 0.957.

DISCUSSION

Relationship between Age and Smoking Behavior

The results of the Chi-square test show no relationship between the age of the respondent and smoking behavior, with a p-value of 0.831. Respondents who smoked in early adults, namely 32.3%, were more than middle adults by 30%. Early adults are slightly more likely to smoke, but at that age, more respondents do not smoke.

Aisyah's research (2017) obtained the same result that there was no relationship between the age of the respondent and smoking behavior, with a p-value 0.163.[7] Other studies also similar thing that age has no relation with smoking behavior.[8]

As you get older, your immune system decreases, and you are more susceptible to disease. The decrease in body resistance accompanied by smoking habits that are still carried out will further worsen the health of the body[9].

Relationship between Income and Smoking Behavior

The results of the Chi-square test show no relationship between the income of respondents and smoking behavior, with the results p-value of 0.136. It noted that 40.5% of respondents who smoke with middle-income are more than low-income, namely 37.5%, and high-income, namely 19.4%. For a teacher who has an average income of Rp. 2,000,000-Rp. 4,000,000, with an average monthly expenditure of Rp. 40,000-Rp 50.000 is not a heavy thing, depending on each person prioritizing cigarettes as a necessity.

Research by Nurdiennah et al. (2017) showed the same result that is no relationship between income and the smoking behavior of AKAP bus drivers. Respondents with heavy smoking behavior had more low-income, while more light smoking behavior had high-income[10].

Relationship between Role as a Teacher and Smoking Behavior

Student character has formed one of which is the role of the teacher by educating, teaching, guiding, and being a role model. Even though most of the respondents had carried out their roles well, there are still respondents who have never rebuked people who smoke in the school environment, namely 24.7%. 22.2% of respondents also had never advised people who smoked in the school environment, although there are 61.7% of respondents have colleagues who smoke at school, and 50.6% of respondents have seen their student's smoke. Physical Education, Sports, and Health Teachers who smoke are more often found teaching at the high school level, at that age is a period of searching for identity and having the courage to try something new, and vulnerable to being influenced by the environment.

The results show a relationship between the respondent's role as a teacher and smoking behavior, with a p-value of 0.000. It noted that 70.6% more respondents who are smokers with their role as teachers in the low category compared to the high, namely 20.3%.

It is according to Murti's research (2018) concerning the role of Physical Education, Sports, and Health Teachers in character building in elementary school students shows that most of them have fewer

roles, one of which is as role models. In line with the behavior of Physical Education, Sports, and Health Teachers who still smoke[11].

Based on the role theory put forward by Jacob Moreno, someone who has a particular role had expected to behave according to his role because the teacher's role considering to have the potential to influence the behavior of students and other people[12].

Relationship between Knowledge and Smoking Behavior

The results show a relationship between respondents' knowledge and smoking behavior, with a p-value of 0.000. Respondents who smoked had more poor knowledge, namely 72.7% rather than good knowledge, namely 15.3%. In this study, the respondent's knowledge about the chemical content in cigarettes and the susceptibility of smokers to disease is still lacking as a cause of smoking behavior because if someone understands the contents consumed, it will consider whether it is harmful for consumption or not.

Research by Herawardhani et al. (2021) showed the same results that knowledge has a relationship with smoking behavior[13]. The research supported by Hidayati and Arikensiwi (2012) states that teachers with low knowledge are 1.5 times more likely to smoke than teachers with high knowledge[14].

Theory of Health Belief Model (HBM) and Theory of Planned Behavior (TPB) include theory at the individual level that focuses on intrapersonal factors in which there is knowledge. Someone who has good knowledge of health will take care of themselves better[15,16]. Physical Education, Sports, and Health Teachers should have good knowledge about smoking as a provision for health education to their students and apply it to everyday life as a form of knowledge taught to their students per its application in their daily lives.

Relationship between Perceived Susceptibility and Smoking Behavior

The results of the Chi-square test show that respondents' perceptions of susceptibility to smoking behavior have no relationship with the results p-value of 0.115. It noted that respondents who smoked with a low perception of susceptibility, namely 39.5%, were more than those in the high category, namely 23.3%. 29.6% of respondents thought smoking didn’t effect muscle strength. The physical activity carried out by a smoking sportsperson will not be optimal because of the disruption of the organs in the body[17]. Respondents' susceptibility to hereditary factors of cancer is still low. 30.9% of respondents thought that this risk would not occur. Smoking habits that continue to carry out can trigger cancer risk for their offspring.

Corresponding to the results of research by Permatasari and Nawangsih (2018) say that 61% of smoker respondents had a powerful perception of suscepbility[18]. Larasati's study (2016) obtained the same results, amounting to 66.7% of student smokers at the Faculty of Medicine believed that they were at risk of disease, but this did not influence them to stop smoking[19].

Based on Theory Health Belief Model says that the greater the person's belief in the perceived risk, the confidence to prevent the occurrence or reduce actions that result in these risk will be even greater[16]. The results of this study indicate that perceived susceptibility is not related to smoking behavior because not a few respondents feel that perceived susceptibility is high but smokes, and those with low perceptions do not smoke.

Relationship between Perceived Seriousness and Smoking Behavior

The test results show a relationship between respondents' perceived seriousness and smoking behavior with a p-value of 0.000. More respondents who smoke have a low perception of seriousness at 72.2%, compared to a high perception at 19%. 51.9% of respondents considered the severity of injury while exercising low. As a sports player where physical activity had carried out a lot, a seriousness of

an injury is very likely to occur because smoking can reduce muscle strength and bone density. Recovery from serious injuries takes a long time.

Research by Yesa and Nawangsih (2017) says the same thing in the city of Bandung the perception of the seriousness of smoking behavior in heavy smokers has low perception[20].

Based on Theory Health Belief Model, the threats posed by smoking are more likely to prevent this behavior. An individual takes preventive action against a disease if the perceived risk is increasingly threatening him[15]. Teacher of physical Education, Sport and Health, as sports actors, need to maintain a healthy body from these severe illnesses. Sports activities generally require more energy, and, if accompanied by smoking behavior, can interfere with the function of the body's organs.

Relationship between Perceived Benefits and Smoking Behavior

The test results show a relationship between respondents' perceived benefits of smoking behavior and the p-value of 0.017. It noted that respondents who smoked with low perceived benefits, namely 48.1%, were more than those in the high category, namely 22.2%. Although all respondents believe that the benefits of staying away from smoking make the body healthier, 18.5% of respondents think that smoking still gets the maximum benefits from exercise. In fact, smoking can interfere with the respiratory organs, as the heart to work harder, irregular breathing, and fatigue easily.

Yesa and Nawangsih's research (2017) showed consistent results that, in the city of Bandung ,74.7% of heavy smokers had a weak perception of benefits, meaning that most did not believe that quitting smoking would benefit them[20].

Theory Health Belief Model shows that individual belief in the perceived benefits of action to reduce the risk of getting a disease is effective in forming behavior.[15] Physical Education, Sports, and Health Teachers as sports actors where exercising contributes many benefits to the body, however smoking behavior carried out by these teachers can interfere with sports activities such as feeling tired quickly when exercising, organs that are increasingly damaged by smoking, driven by strenuous activities such as exercising will further damage the organs.

Relationship between Cues to Action and Smoking Behavior

The bivariate analysis results show no relationship between respondents' cues to action and smoking behavior, with a p-value of 0.957. Cues to action of smoker respondents in the high category are 31.1% more than those in the low, namely 30.6%. Smokers have high cues to action to stop or stay away from smoking behavior, while non-smokers have low cues to action.

Cues shown from the environment of friends are greater than family in staying away from smoking. 27.2% of the respondents had friends who died from smoking, while the family environment of 11.1%. Besides that, 44.4% of the respondents had friends who had diseases caused by smoking, while the friends' environment was 19.8%. Looking at their medical history, 59.3% of respondents never received a recommendation to stop smoking from a doctor. It becomes one of the reasons why they don’t take action to stop smoking even though smokers have high cues.

Research by Febrina et al. (2016) showed results that were in line with the fact that most of the respondents who smoke, even though they have a high motivation not to smoke, don’t influence them to stay away from smoking behavior.[8] Smoking behavior that has become a habit will be difficult to generate the urge to take action to stop smoking unless there is something very strongly threatening it.

Based on Theory Health Belief Model, the belief to act to change health behavior is influenced by a sign or cue, either from other people (friends or family), the media, health records, illness from family members, warning labels, or a person's perception of his own health condition[21].

Relationship between Attitude and Smoking Behavior

Respondents had a good attitude towards smoking bans in schools, with 98.8% of respondents agreeing that smoking has prohibited in schools. This attitude supports the existence of Regional Regulation No. 9 of 2019 concerning Non-Smoking Areas.

The results of the bivariate analysis show p-value of 0.000 means that the attitude of the respondent has a relationship with smoking behavior. Smoker respondents had a more bad attitude, namely 68.8%, compared to a good attitude, namely 21.5%. Although most of the respondents agree that smoking in schools is prohibited, there are still 8.6% of respondents who think that people who smoke at school do not have to get penalized, while quite a lot of co-workers of the respondent smoked at school and had seen student's smoke. The attitude of teachers who are less assertive towards smokers, especially in the school environment, hinders the prevention and control of smoking behavior, because indirectly the less assertive attitude supports smoking behavior.

Riyadi and Handayani's research (2021) also says the same thing that indirectly between attitudes and smoking behavior through intention shows a relationship[22].

Theory Planned Behaviour states that someone who has a strong belief that smoking behavior produces something positive will have a positive attitude, and vice versa[15]. The attitude of a teacher becomes one of the views of others on the image of a teacher who is considered a role model. To be able to form a good student personality, a teacher must show a good attitude manifested by good behavior as well.

Relationship between Subjective Norm and Smoking Behavior

From the test results Chi-square obtained a p-value equal to 0.000 means that the subjective norms of respondents with smoking behavior show a relationship. It has known that respondents who smoke with a high subjective norm are equal to 48.8% more than those in the low category, namely 10.5%. Smoker respondents have a supportive environment for smoking. The work environment supports smoking behavior the most, with 61.7% of respondents having friends/co-workers who smoke at school. Support for smoking behavior in the family environment is not that great, more than 90% of respondents have families who admonish them when smoking at home, besides that 70.4% of respondents have families who prohibit them from smoking. The family is the closest relationship of the respondent. Therefore, more concerned about family health. Student support for smoking behavior is still low, with 28.4% of respondents having perceived that students don't dare to rebuke teachers if they smoke at school because of fear.

The results of this study are consistent with Riyadi's research (2022) that indirectly through intention subjective norms with smoking behavior show a relationship[23]. Subjective norms have a 3.194 times greater effect on the intention to quit smoking[24].

Theory Planned Behaviour shows the same result that the individual's perception to perform behavior supported by the social environment. Individuals will bring up behavior due to the social pressure they feel[15]. Law number 14 of 2005 concerning Teachers and Lecturers states that professional educators should have personality competencies, one of which is to act according to the norm[25]. The school environment shouldn't support smoking behavior because there are regulations for smoking-free areas in schools. However, in this study, the majority of respondents considered the respondent's co-worker environment to be the most supportive of smoking behavior.

Relationship between Perceived Behavioral Control and Smoking Behavior

The bivariate analysis shows results in a p-value equal to 0.003, meaning that between the perceived behavioral control of respondents and smoking behavior, there is a relationship. It is known that respondents who smoke with low perceived behavioral control are equal to 64.3% more than those in the high category, namely 23.9%. As much as 29.6% of respondents still find it difficult to control

themselves from smoking when they are close to/gathered with friends who smoke, in line with the subjective norms of respondents where most have a work environment that supports smoking behavior, therefore smoking behavior tends to be carried out. Based on the regulation of the minister of education and culture, number 23 of 2017 says that school hours are carried out for eight hours per day or are estimated to finish at 14.00 to 15.00, while Physical Education, Sports, and Health subjects end before 12.00[26]. It can be said that Physical Education, Sports, and Health Teachers have quite a lot of free time (not teaching), and if they don't have other activities during their free time, boredom can arise. This feeling of boredom was the most inhibiting the respondent from not smoking.

Research by Riyadi and Handayani (2021) says the same thing that directly the perceived control of non-smoking behavior has a negative influence on smoking behavior, and indirectly there is positive influence between the perception of non-smoking behavioral control with the intention of not smoking, after that, this intention has a negative infuence on smoking behavior[22].

Based on the Theory of Planned Behaviour, perceptions of behavioral control can directly influence behavior without going through intention. The control one feels over behavior is determined by one's perception of how easy or difficult it is to perform the behavior. For someone who has control over his behavior, it will be easier to show that behavior[16].

CONCLUSION

Based on research that has been carried out on 81 Physical Education, Sports, and Health Teachers in Surakarta City, the result show that 30.9% of them smoked, and the other 69.1% were non-smokers.

There is a significant relationship between knowledge, attitude, role as a teacher, perceived seriousness, perceived benefits, perceived behavioral control, and subjective norms with smoking behavior in Physical Education, Sports, and Health Teachers in Surakarta.

CONFLICT OF INTEREST

The authors reported no competing interests.

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