THE RELATIONSHIP BETWEEN KNOWLEDGE, ECONOMY, AND ENVIRONMENT WITH THE BEHAVIOR OF E-CIGARETTE (VAPE) USERS IN DWI PUTRA SMK STUDENTS SOUTH TANGERANG

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Abstract

Electric Cigarette (Vape) is a device that heats liquid to create an aerosol and then inhaled by the user, containing or not containing nicotine. The purpose of this study was to determine the relationship between knowledge, economy, and environment with the behavior of e-cigarette users (vape) in students of SMK Dwi Putra, South Tangerang City. This type of research uses observational analytics with a cross-sectional approach. This research method uses a purposive sampling technique where the total population is 105 respondents. Based on the results of the study using the Chi-Square test, it was found that there was a relationship between knowledge and the behavior of e-cigarette users in students of SMK Dwi Putra South Tangerang City (p-value = 0.013 < 0.05) there was a relationship between the economy and the behavior of e-cigarette users in students of SMK Dwi Putra South Tangerang City (p-value = 0.00 < 0.05) there was a relationship between the environment and the behavior of e-cigarette users in students of SMK Dwi Putra South Tangerang City (p-value = 0.017 < 0.05). From this study, it is expected that each school needs to hold periodic and continuous education for students and their parents about e-cigarettes and the dangers they pose.

Keywords: E-cigarettes, Knowledge, Economy, Environment.

INTRODUCTION

Smoking is one of the prevalent habits in daily life that is part of people's lives. Based on World Health Organization (WHO) data in 2019, tobacco kills more than 8 million people per year worldwide. More than 8 million of these deaths result from direct tobacco use, while around 1.2 million of these deaths are experienced by passive smokers (WHO, 2019).

With the increasing number of smoking problems in Indonesia, recently a cigarette trend has emerged in Indonesia commonly referred to among teenagers, namely vape. WHO 2019, says e-cigarettes are an Electronic Nicotine Delivery System (ENDS). E-cigarettes are designed to produce nicotine vapor without burning tobacco while still providing the sensation of smoking (WHO, 2019).

E-cigarettes consist of 3 parts, namely the battery, atomizer (the part that will heat and vaporize the nicotine solution), and cartridge (containing nicotine solution). The content of the solution contained in e-cigarettes is nicotine, propylene glycol, glycerol, water, and various flavorings (BPOM, 2015).

In Indonesia, the use of e-cigarettes is increasing and mushrooming, based on Basic Health Research (Riskesdas) 2018 shows, for the proportion of e-cigarettes smoked by people aged less than 10 years in Indonesia in 2018 as much as 2.8%, most e-cigarette users in 10-14 year age group as much as 10.6%, the 15-19 year age group 10.5%, and the 20-24 year age group as much as 7% and 12.1% most in the school-age group (Riskesdas, 2018).

WHO data, shows that within 7 years (2010-2017) the number of vape users increased by 34 million users whereas the world's vape users in 2018 were recorded at 41 million people. Currently, it is estimated that the number of world vape users reaches 44 million people, the 10 countries that use e-cigarettes the most are America, England, France, Germany, China, Canada, Poland, Italy, Russia, and South Africa (WHO, 2019).

In the behavior of using e-cigarettes, a person usually has a reason that it can provide benefits for him such as wanting to try the flavors offered, being considered slang, relieving fatigue, a safer smoking alternative, and being accepted in a friendship environment (Kemenkes RI, 2018).

Based on preliminary studies that have been conducted by researchers at SMK Dwi Putra, South Tangerang City to 10 students, it was found that 7 (70%) students used e-cigarettes and 3 (30%) students said they did not use e-cigarettes (vape). It is known that 7 (70%) students use e-cigarettes (vape) because they are influenced by the family and friend environment and the price of e-cigarettes (vape) that can be reached by students according to the pocket money they get. Based on the description and data above, the researcher is interested in conducting research at SMK Dwi Putra because the researcher sees many students who use e-cigarettes. Therefore, the researcher wants to conduct a study with the title "The relationship between knowledge, economy, and environment with the behavior of e-cigarette users (vape) in students of SMK Dwi Putra Tangerang City".

RESEARCH METHODS

This study used observational analytic research with a quantitative approach and cross-sectional design. The population in this study were all students in grades X, XI, and XII SMK Dwi Putra Kota South Tangerang, totaling 105 students, the sample size obtained based on calculations in this study was 83 respondents. Data collection techniques in this study were carried out by using a questionnaire of knowledge, economy, environment, and behavior of e-cigarette users. Data analysis using the Chi-Square test, namely univariate analysis

RESULTS

1. Univariate Analysis

Table 1: Frequency Distribution of Knowledge among Students of SMK Dwi Putra, South Tangerang City

Knowledge	Frequency (n)	Percentage (%)
Low	31	37,3
High	52	62,7
Total	83	100

Source: Primary Data (2023)

Based on Table 1, the frequency distribution of respondents shows that more than half of the respondents have high knowledge as many as 52 respondents with a percentage (62.7%).

Table 2: Frequency Distribution of Economics among Students of SMK Dwi Putra, South Tangerang City

Economy	Frequency (n)	Percentage (%)
Not in favor	40	48,2
Supportive	43	51,8
Total	83	100

Sumber: Data Primer (2023)

Based on Table 2, the frequency distribution of respondents shows that more than half of the respondents have a supportive economy as many as 43 respondents with a percentage (51.8%).

Table 3: Frequency Distribution of Environment among Students of SMK Dwi Putra, South Tangerang City

Environment	Frequency (n)	Percentage (%)
Not Supportive	19	22,9
Supportive	64	77,1
Total	83	100

Sumber: Data Primer (2023)

Based on Table 3, the frequency distribution of respondents shows that most respondents have a supportive environment as many as 64 respondents with a percentage of (77.1%).

Table 4: Frequency distribution of e-cigarette user behavior among students of SMK Dwi Putra, South Tangerang City

Behavior of e-cigarette Users	Frequency (n)	Percentage (%)
Yes	47	56,6
No	36	43,4
Total	83	100

Sumber: Data Primer (2023)

Based on Table 4, the frequency distribution of respondents shows that more than half of the respondents have the behavior of e-cigarette users (vape) as many as 47 respondents with percentage (56, 6%).

Table 5: Relationship between knowledge and behavior of e-cigarette users among students of SMK Dwi Putra, South Tangerang City

Environment	Behavior of e-cigarette users				Total		P-value
	Yes		No				
	n	%	n	%	n	%	
Unsupportive	6	7,2	13	15,7	19	22,9	
Supportive	41	49,4	23	27,7	64	77,1	
Total	47	56,6	36	43,4	83	100	0,17

Sumber: Data Primer 2023

Based on the results of statistical tests using the chi-square test, the p-value is 0.017 ($p < 0.05$), it can be concluded that Ha is accepted and Ho is rejected, which means

that there is a relationship between the environment and the behavior of e-cigarette users.

2. Bivariate Analysis

Table 6: Relationship Economic with e-cigarette user behavior among students of SMK Dwi Putra, South Tangerang City

Economic	Behavior of E-cigarette Users				Total		P-value
	Yes		No				
	n	%	n	%	N	%	
Un-supportive	10	12,0	30	36,2	40	48,2	
Supportive	37	44,6	6	7,2	43	51,8	
Total	47	56,6	36	43,4	83	100	0,00

Based on the results of statistical tests using the chi-square test, the p-value is 0.00 (p < 0.05), it can be concluded that Ha is accepted and Ho is rejected, which means that there is a relationship between the economy and the behavior of e-cigarette users.

Table 7: Relationship between environment and e-cigarette user behavior among students of SMK Dwi Putra, South Tangerang City

Knowledge	Behavior of e-cigarette Users				Total		P-value
	Yes		No				
	n	%	n	%	n	%	
Not Supportive	12	14,4	19	22,9	31	37,3	
Supportive	35	42,2	17	20,5	52	62,7	
Total	47	56,6	36	43,4	83	100	0,13

Sumber: Data Primer 2023

Based on the results of statistical tests using the chi-square test, the p-value is 0.013 (p < 0.05), it can be concluded that Ha is accepted and Ho is rejected, which means that there is a relationship between knowledge and the behavior of e-cigarette users.

DISCUSSION

Relationship between knowledge and behavior of e-cigarette users among students of SMK Dwi Putra, South Tangerang City

The results of the Bivariate analysis show that there is a relationship between knowledge and the behavior of e-cigarette users at SMK Dwi Putra with a p-value of 0.013, this result shows p <0.05, which means Ha is accepted and Ho is rejected.

A person's knowledge about e-cigarettes will increase their behavioral control over health problems. Someone with good knowledge about e-cigarettes tends to have an internal control center. Vice versa, someone with low knowledge tends to have an external control center (Hasna, 2017).

This research is in line with research conducted by Ellyta Handayani, et al., (2022) with the title Electric Smoking Behavior in the Trustsquad Semarang Community, the results of this study indicate that the p-value is 0.029, which means that there is a significant relationship between knowledge and electric smoking behavior in the Trustsquad Semarang Community.

In this study, it can be concluded that there is a relationship between knowledge and the behavior of e-cigarette users (vape) at SMK Dwi Putra students. Adolescents'

knowledge of e-cigarettes is high because they know the dangers of e-cigarettes such as e-cigarettes containing harmful chemicals but the Internal Control Center of Adolescents still considers that e-cigarettes are friendly and not more dangerous than conventional cigarettes, so even though they have high knowledge about e-cigarettes or know the dangers of e-cigarettes, they still use e-cigarettes.

Relationship Economic with the Behavior of E-cigarette Users in Students of SMK Dwi Putra, South Tangerang City

The results of the Bivariate analysis show that there is a relationship between the economy and the behavior of e-cigarette users at SMK Dwi Putra with a p-value of 0.00, this result shows p <0.05, which means Ha is accepted and Ho is rejected.

Income from parents affects adolescents' knowledge about cigarettes. Teenagers will find it easy to get information and buy e-cigarettes because the price of e-cigarettes will be easily accessible to people with high incomes (Irwan, 2017).

This research is in line with research conducted by Irawan (2021) with the title Analysis of Factors Affecting Adolescents Using Electronic Cigarettes (Vape) in Bengkulu City, the results of this study indicate that the p-value is 0.020, which means that there is a significant relationship between the economy and the use of e-cigarettes in adolescents in Bengkulu City.

In this study, it can be concluded that there is a relationship between the economy and the behavior of e-cigarette users (vape) in SMK Dwi Putra students. High income or income of parents and pocket money given unwisely will cause problems for adolescents who are wasteful, do not value money, and are too lazy to study so they tend to be tempted to follow trends.

Relationship between environment and e-cigarette use behavior among students of SMK Dwi Putra, South Tangerang City

The results of the Bivariate analysis show that there is a relationship between the environment and the behavior of e-cigarette users at SMK Dwi Putra with a p-value of 0.017, this result shows p <0.05, which means Ha is accepted and Ho is rejected.

Based on Lawrence Green's theory, there is a driving factor by the surrounding environment such as the influence of friends making someone follow what their peers do, where the majority of reasons for adolescents related to the use of e-cigarettes are due to invitations from friends, following friends and trying it out (Angga, 2018).

This research is in line with research conducted by Irawan (2021) with the title Analysis of Factors Affecting Adolescents Using Electronic Cigarettes (Vape) in Bengkulu City, the results of this study indicate that the p-value is 0.00, which means that there is a significant relationship between the environment and the use of e-cigarettes in Bengkulu City adolescents.

In this study, it can be concluded that there is a relationship between the environment and the behavior of e-cigarette users (vape) at SMK Dwi Putra students. The environment is very influential in adolescents using e-cigarettes. In a family, if one of the family members smokes, it is likely to influence them or other family members to smoke as well as friends who use e-cigarettes to be the main factor in the social environment of adolescents to be affected by using it.

CONCLUSION

Based on the description of the research results, it can be concluded as follows:

1) It was identified that more than half of the respondents had high knowledge as many as 52 respondents with a percentage (62.7%).

2) It was identified that more than half of the respondents had a supportive economy as many as 43 respondents with a percentage of (51.8%).

3) It was identified that most respondents had a supportive environment as many as 64 respondents with a percentage of (77.1%).

4) It was identified that more than half of the respondents had e-cigarette (vape) user behavior as many as 47 respondents with a percentage of (56.6%).

5) It was identified that there was a relationship between knowledge and the behavior of e-cigarette users in students of SMK Dwi Putra, South Tangerang City, obtained a value (p-value = 0.013 <0.05).

6) It was identified that there is a relationship between the economy and the behavior of e-cigarette users in students of SMK Dwi Putra South Tangerang City obtained a value (p-value = 0.00 < 0.05).

7) It is identified that there is a relationship between the environment and the behavior of e-cigarette users in students of SMK Dwi Putra, South Tangerang City, obtained a value (p-value = 0.017 < 0.05).

References

1) Agina. 2019 "Factors Associated with Vapor Use Behavior among Students of Bina Sejahtera 2 Vocational High School in Bogor City". Journal of Public Health. Vol. 2 No. 2.

2) Angga. 2018. Factors Associated with the Use of Electronic Cigarettes in the West Pontianak District Area.

3) Arikunto, S. 2016. Research Procedures A Practical Approach. Jakarta: Rineka Cipta.

4) BPOM. 2015. POM Info on the Dangers of Electronic Cigarettes. Jakarta.

5) BPOM. 2017. Review of Electronic Cigarettes in Indonesia Second Edition. Jakarta Center: Directorate of Narcotics, Psychotropic and Addictive Substances Supervision of the Deputy for the Supervision of Therapeutic Products and Drugs of the Food and Drug Administration of the Republic of Indonesia.

6) Handayani, E., Prabamurti, P., Handayani, N. 2022. Electric Smoking Behavior in the Trustsquad Community Semarang. Journal of Public Health.

7) Hasna. 2017. "Factors Associated with the Use of E-cigarettes in Smokers in High Schools in Bekasi City". Journal of Public Health. Vol 5 No.3.

8) Irawan. 2021. Analysis of Factors Affecting Adolescents Using Electronic Cigarettes (Vape) in Bengkulu City.

9) Irwan. 2017 Model Analysis of Risk Factors for Adolescent Smoking in Gorontalo City. Jakarta

10) Ministry of Health RI. 2018. Factors that encourage smoking. Jakarta: Ministry of Health of the Republic of Indonesia.

11) Indonesian Ministry of Health. 2020. Controlling the Consumption of Other Tobacco Products (HPTL). Ministry of Health of the Republic of Indonesia.

12) Riskesdas. 2018. Basic Health Research Results. Jakarta: Basic Health Research. Electric Cigarettes are More Dangerous Than Conventional Cigarettes https://www.antaranews.com/berita/598805/tiga-bukti-rokok-elektrik-lebih-berbahaya-dibanding-rokok-konvensional, accessed on September 09, 2023, at 11.40.

13) WHO. 2019. World No Tobacco Day 2019-Tobacco And Lung Health. World Health Organization.

14) WHO. 2020. Tobacco. World Health Organization Retrieved from https://www.who.int/news-room/factsheets/detail/tobacco#:~:text=*%20WHO's%20Framework%20Conventio n%20on%20Tobacco