

**RELATIONSHIP BETWEEN ENVIRONMENTAL HEALTH  
LITERACY LEVEL AND PRO- ENVIRONMENTAL BEHAVIOR  
IN COLLEGE STUDENTS****Nofrya Amanda<sup>1\*</sup>, Winda Parlin<sup>2</sup>**<sup>1</sup>Public Health Study Program, Faculty of Health and Informatics, Payung Negeri  
Pekanbaru Health Institute, Indonesia**\*Corresponding author:** [nofryaamanda@gmail.com](mailto:nofryaamanda@gmail.com)**Abstract**

Environmental health literacy (EHL) has emerged as a field of study that integrates concepts from several disciplines, such as risk communication, health literacy, environmental health science, communication studies, and safety culture. Knowledge can be defined as the foundation that shapes attitudes, which in turn influence a person's actions or behavior. This study aims to analyze the relationship between the level of environmental health literacy and pro-environmental behavior. This study employs a quantitative approach with an analytical cross-sectional design. The sampling technique used was accidental sampling with a total of 83 respondents, all students in the Public Health Study Program at the Payung Negeri Pekanbaru Health Institute. The research instrument consisted of a questionnaire. The relationship between variables was analyzed using the SpearmanRank test. The results indicate a significant relationship between the level of environmental health literacy and pro-environmental behavior, with a p-value of  $0.000 < 0.05$  and a correlation coefficient (r) of 0.611 ( $0.60-0.799 = \text{strong}$ ).

**Keyword: Environmental Health Literacy, Pro-Environmental Behavior, Knowledge, Attitudes****INTRODUCTION**

Environmental health is an important part of sustainable development and improving the quality of human life. According to World Health Organization [1], environmental health encompasses the physical, chemical, and biological aspects of the outside environment that affect a person's well-being and encourage behaviors that protect the environment. Environmental health literacy (EHL) has been a growing field since the 1950s, and NIEHS played an important role in producing programs to expand LHE in populations in the early 1990s. Environmental health literacy is an important concept that connects people's understanding of health with the environmental conditions around them [2]. This concept is described as something that is evolving, which combines various theories from the fields of risk communication, environmental health sciences, behavioral sciences, evaluation, communication, public health, and social sciences [3].

As time goes by, environmental health issues are getting more attention as the impact of climate change and pollution begins to be felt, especially in urban areas. The involvement of the younger generation can be realized through various activities, both conceptual and operational, related to environmental issues. To support such involvement, adequate knowledge and attitudes are needed. Knowledge is formed when individuals use their senses and thinking skills to recognize an object or event that has never been known before. Attitude can be interpreted as a positive or negative assessment of something related to emotional aspects, which then affects a person's response to social objects [4].

Pro-environmental behavior is an action taken to reduce the adverse impact on the environment [5]. Some of the things that affect environmentally friendly behavior include focusing on control, values that a person has, experiences that have been experienced, political perspectives, literacy and education levels, disposition to the environment, individual character, gender, age, sense of personal responsibility, orientation of life goals, and

environmental suitability or accessibility [6]. Thus, knowledge can be interpreted as the initial basis that will form attitudes, then affect a person's actions or behavior. Good knowledge about something can encourage behavior change and foster a positive attitude towards it.

Globally, the findings of the study show that the level of environmental literacy and the level of environmental awareness among students still show significant variations. A study in Italy involving 4,778 college students found that about 44.4% of respondents had low levels of environmental health literacy [7]. However, some countries show better results. For example, in Spain, 67.9% of students have high environmental literacy, and as many as 82.1% consistently engage in environmentally friendly behaviors [8]. In Indonesia, several studies show that awareness and pro-environmental behavior among students are in the category of sufficient to high. The research was conducted on Biology Education students at UIN Walisongo Semarang, where around 65.6% of respondents were in the category of high pro-environmental behavior [9].

Several studies in Indonesia have found that environmental knowledge formally acquired in higher education does encourage pro-environmental practices, such as waste management, energy saving, and recycling. However, knowledge alone does not necessarily change attitudes or behaviors directly; Real practice is more influenced by experience and involvement in environmental programs [10]. A positive attitude towards the environment also plays an important role, but it is often not enough in the absence of real behavioral encouragement [11]. Within the Payung Negeri Pekanbaru Health Institute, students of the Public Health Study Program are a group with high potential in having good environmental literacy. However, there have not been many previous studies that have directly measured the relationship between environmental health literacy levels and pro-environmental behaviors in college students. This condition raises the need to conduct research to find out the level of awareness and environmental behavior of students on the campus.

The urgency of this study is supported by the need to form a young generation that can be a driver of change towards a sustainable society. As Brundiers and Wiek (2021) reveal, higher education should not only teach knowledge, but also shape sustainable values and actions [12]. Therefore, understanding the extent to which environmental health literacy influences pro-environmental behavior is an important step for the development of education policies at the university level.

This research is expected to fill the gaps in the literature regarding the relationship between environmental health literacy and pro-environmental behavior in the context of health students in Indonesia, especially in Pekanbaru. Through empirical findings, the results of this study can be a basic foothold for the development of more practical environmental education modules and encourage student participation in green campus programs. In addition, this research also contributes to the achievement of the Sustainable Development Goals (SDGs), especially Goal 3 (good health) and Goal 13 (handling climate change).

## **RESEARCH METHODS**

This study uses a quantitative approach. The research design chosen was cross sectional analytical. The selection of the research location at the Payung Negeri Pekanbaru Health Institute is based on the consideration that this institution has activities that are in accordance with the research topic and has data that supports the research process. The variables in this study consist of independent variables, namely the level of environmental health literacy and dependent variables, namely pro-environmental behavior. The population in this study is all students of the Public Health study program at the Payung Negeri Pekanbaru Health Institute level 1-4 in 2025 with a total population of 335 students. The sampling

technique uses the accidental sampling method. Sample size uses the slovin formula with a selected error rate of 10%.

$$n = \frac{N}{1 + Ne^2}$$

$$n = \frac{335}{1 + 335(0,1)^2}$$

$$n = \frac{335}{1 + 335(0,1)^2}$$

$$n = \frac{335}{1 + (335 \cdot 0,01)}$$

$$n = \frac{335}{1 + 3,35}$$

$$n = \frac{335}{4,35}$$

n = 77 they respond

Thus, the minimum number of samples in this study is 77 respondents. Because the sample obtained was 83 respondents (24.7% of the population), the number was qualified and could represent the population.

## RESEARCH RESULTS

### Normality Test

Table 3. Normality Test Results

| Variabel                      | Sig.  | Remarks  |
|-------------------------------|-------|----------|
| Environmental Health Literacy | 0,000 | Abnormal |

Source: Primary data analysis, 2025

Based on table 3, the results of the normality test show that the environmental health literacy variable obtained a significant value of 0.000, which states that the two values are < 0.05, so that the data is not distributed normally. Thus, because there are variables that are not normally distributed, the relationship analysis in this study uses a non-parametric test, namely Spearman Rank.

### Respondent Characteristics

Table 4. Frequency Distribution Based on Respondent Characteristics

| No. | Characteristics | Frequency (n) | Percentage (%) |
|-----|-----------------|---------------|----------------|
| 1.  | Age             |               |                |
|     | 17              | 2             | 2,4            |
|     | 18              | 12            | 14,5           |
|     | 19              | 25            | 30,1           |
|     | 20              | 35            | 42,2           |
|     | 21              | 6             | 7,2            |
|     | 22              | 3             | 3,6            |
|     | Total           | 83            | 100            |

|    |                |    |      |
|----|----------------|----|------|
| 2. | Gender         |    |      |
|    | Female         | 76 | 91,6 |
|    | Male           | 7  | 8,4  |
|    | Total          | 83 | 100  |
| 3. | Residence      |    |      |
|    | Dormitory      | 2  | 2,4  |
|    | Boarding House | 58 | 69,9 |
|    | Home           | 21 | 25,3 |
|    | Other (Rented) | 2  | 2,4  |
|    | Total          | 83 | 100  |

Source: Primary data analysis, 2025

Based on table 4. From the results of the researcher's analysis conducted on 83 respondents, most respondents are 20 years old, namely 35 people (42.2%). Most respondents were female as many as 76 people (91.6%). Most respondents lived in boarding houses, namely 58 people (69.9%).

#### **Respondents' Level of Knowledge about Environmental Health**

Table 5. Distribution of Respondent Frequencies Based on Knowledge of Environmental Health

| Knowledge | Frequency (n) | Percentage (%) |
|-----------|---------------|----------------|
| Low       | 19            | 22,9           |
| Height    | 64            | 77,1           |
| Total     | 83            | 100            |

Source: Primary data analysis, 2025

Based on table 5, it is known that most respondents have a level of knowledge about environmental health, namely 64 respondents (77.1%).

#### **Respondents' Attitude Level to Environmental Health**

Table 6. Frequency Distribution of Respondents Based on Attitude to Environmental Health

| Attitude     | Frequency (n) | Percentage (%) |
|--------------|---------------|----------------|
| Low          | 16            | 19,3           |
| Height       | 67            | 80,7           |
| <b>Total</b> | <b>83</b>     | <b>100</b>     |

Source: Primary data analysis, 2025

Based on the table, it is known that most respondents have a level of attitude towards environmental health, namely 67 respondents (80.7%).

#### **Environmental Health Literacy Level**

Table 7. Frequency Distribution of Respondents by EHL Level

| EHL          | Frequency (n) | Percentage (%) |
|--------------|---------------|----------------|
| Low          | 17            | 20,5           |
| Height       | 66            | 79,5           |
| <b>Total</b> | <b>83</b>     | <b>100</b>     |

Source: Primary data analysis, 2025

Based on table 7, it is known that most respondents have a high level of EHL, which is as many as 66 respondents (79.5%).

### Pro-Environmental Behavior Levels

Table 8. Frequency Distribution of Respondents Based on Pro-Environmental Behavior

| Behavior     | Frequency (n) | Percentage (%) |
|--------------|---------------|----------------|
| Low          | 18            | 21,7           |
| Height       | 65            | 78,3           |
| <b>Total</b> | <b>83</b>     | <b>100</b>     |

Source: Primary Data Analysis, 2025

Based on table 8. It is known that most respondents have pro-environmental behavior, namely 65 respondents (78.3%).

### The Relationship of EHL Levels to Pro-Environmental Behavior

Table 9. The Relationship Between EHL Levels and Pro-Environmental Behavior in College Students

| Variable                                        | Correlation<br>Coefficient (r) | P-value | N  |
|-------------------------------------------------|--------------------------------|---------|----|
| <b>Environmental Health Literacy<br/>Levels</b> | 0,611                          | 0,000   | 83 |
| <b>Pro-Environmental Behavior</b>               |                                |         |    |

Source: Primary data analysis, 2025

The Spearman Rank correlation test showed a strong and significant relationship between the level of environmental health literacy and pro-environmental behavior among college students, with a correlation value of 0.611 and a p-value of 0.000.

## DISCUSSION

### Level of Knowledge about Environmental Health

Based on the results of data analysis conducted univariably on 83 respondents of the Public Health Study Program at the Payung Negeri Pekanbaru Health Institute, as many as 64 respondents (77.1%) were in the high knowledge category and 19 respondents (22.9%) were in the low knowledge category. The findings indicate that more than half of the respondents have a high level of knowledge about environmental health.

This research is in line with research conducted by Yuniarti et al., (2020) with the title “Pengaruh Pengetahuan Kesehatan Lingkungan terhadap Pembuangan Sampah Sembarangan”. The results of the analysis of the environmental health knowledge univariate showed that 22 (9.8%) respondents with the lack of knowledge category, with 153 (68%) of the knowledge category, and 50 respondents with good knowledge categories (22.2%). This means that respondents still have sufficient environmental health knowledge 153 (68%), and only a small percentage have insufficient knowledge 22 (9.8%) [16].

Knowledge is the first thing that helps a person understand and take actions that are good for the environment. The more a person understands the relationship between the environment and health, the more likely he or she is to engage in environmentally friendly activities. Research by Wiyarno & Widyastuti (2022) also shows that knowledge about

environmental health is positively related to how to dispose of waste correctly. So, knowledge is an important foundation in shaping good attitudes and actions towards the environment among students [17].

### Attitudes towards Environmental Health

Based on the results of data analysis conducted univariably on 83 respondents of students of the Public Health Program at the Payung Negeri Pekanbaru Health Institute, as many as 67 respondents (80.7%) included the category of high attitudes towards environmental health and 16 respondents (19.3%) included the category of low attitudes towards environmental health.

This study aims to see the relationship between environmental knowledge and people's attitudes towards the environment, as has been researched by Ni Nyoman & I Gede (2016) in his research entitled "Korelasi antara Pengetahuan Lingkungan dengan Sikap Terhadap Lingkungan pada Masyarakat Banjar Biaung Desa Kesiman Kertalangu Denpasar". From the results of the univariate analysis, there were 2 people (4%) who had a very good attitude towards the environment, 14 people (28%) had a good attitude, and 34 people (68%) had a very good attitude [18].

People's knowledge of the environment influences the way they see and feel about the environment. If they understand the environment well, their attitude towards the environment tends to be positive. However, if their knowledge of the environment is lacking, then their attitude towards the environment tends to be negative. A positive attitude shows a desire in a person to act to protect the environment, even though it is not necessarily manifested in real actions. According to Theory of Planned Behavior (1991), attitude is the main factor that affects a person's intention to do a behavior. Thus, students who have a positive attitude towards the environment are more likely to show actions that support the environment [19]

### Environmental Health Literacy Level

Based on the results of data analysis conducted by the univariate on 83 respondents of the Public Health Study Program at the Payung Negeri Pekanbaru Health Institute, as many as 66 respondents (79.5%) were in the high EHL category and 17 respondents (20.5%) were in the low EHL category. These findings show that more than half of the respondents have high levels of EHL.

This research is also in accordance with a study conducted by Zurrahmi & Devi (2025) entitled "Hubungan Literasi Kesehatan Lingkungan dengan Kemampuan *Problem Solving* Mahasiswa dalam Isu Lingkungan". In the study, the results of univariate analysis on independent variables of public health literacy level showed that students with high EHL categories, namely with a score of  $\geq 80$ , as many as 195 people (47.3%), the medium EHL category with a score of 60-79 as many as 171 people (41.5%), and the low EHL category with a score of  $< 60$  as many as 44 people (11.2%) [20].

These findings also fit with Gray's research et al., (2021) which states that EHL is a combination of knowledge, skills, and social values that drive action to prevent environmental impacts on health [3]. However, there are still many respondents who have low EHL, so it is necessary to improve the curriculum and campus activities that are based on environmental health and have real implementation.

### Pro-Environmental Behavior

Based on the results of data analysis conducted univariably on 83 respondents of the Public Health Study Program at the Payung Negeri Pekanbaru Health Institute, as many as 65 respondents (78.3%) were in the high category in behaving pro-environment and 18

respondents (21.7%) were in the low category in behaving pro-environment. That is, it shows that more than half of the respondents have high pro-environmental behavior.

This research is in line with the research conducted by Yulinda (2024), entitled “Hubungan Kesadaraan Lingkungan dan *Place Attachment* dengan Perilaku Prolingkungan pada Mahasiswa di Kampus”. With the results of the univariate analysis, as many as 237 people (75%) had moderate pro-environmental behavior and as many as 42 people (31%) were at a high level of pro-environmental behavior [21].

According to Kollmus and Agyeman, as explained by Nurfajriani et al., (2018), pro-environmental behavior is an action that aims to reduce negative impacts on the environment. This behavior should be done by everyone. However, as time goes by, many people begin to care no longer about the environment. In daily life, there are still many actions that damage the environment. Such behavior still occurs due to the lack of public attention and awareness of the environment [22].

### **The Relationship between Environmental Health Literacy Levels and Pro-Environmental Behavior in College Students**

Based on the results of a statistical test with the Spearman Rank correlation test, it was found that there was a strong and significant positive relationship between the level of environmental health literacy and pro-environmental behavior in students of the Public Health study program at the Payung Negeri Pekanbaru Health Institute. A significance value of 0.000 ( $p < 0.05$ ) was obtained with a correlation coefficient of 0.611 (0.60-0.799= strong). These results show that there is a meaningful relationship between environmental health literacy and pro-environmental behavior in students of the Public Health Study Program, Payung Negeri Pekanbaru Health Institute. The value of the correlation coefficient of 0.611 indicates that the strength of the relationship is in the strong category with a positive relationship direction. This indicates that the better the level of environmental health literacy that students have, the better the pro-environmental behavior tendency will be.

This research is in accordance with research conducted by Hamidah & Dewi (2025) entitled “Pengaruh Literasi Lingkungan terhadap *Environmental Responsibility* Siswa di SMA Negeri Kebakkramat Kabupaten Karanganyar” used are nonprobability sampling by type purposive sampling. The number of samples used was 180 people. Data is collected through tests, questionnaires, and documentation. The results of the study show that the p-value by  $0.000 < 0.05$ . It can be concluded that there is a relationship between the influence of environmental literacy on environmental responsibility [23].

This research is not in line with the research conducted by Sekar et al., (2024) entitled “Hubungan Pengetahuan Pencemaran Lingkungan dengan Perilaku *Pro-environmental* Berdasarkan Jenjang Kelas”. The results showed that there was no relationship between the level of knowledge about environmental pollution and pro-environmental behavior based on grade level. This is evident from the significance value of 0.991 in class X and 0.777 in class XI MIPA, which shows that there is no significant difference in knowledge about environmental pollution based on grade level [24].

Environmental literacy helps a person understand and assess environmental conditions, so that they can make appropriate decisions and actions to maintain and improve the environment. By understanding more deeply about the ecological footprint and its impacts, a person will be more concerned and more active in taking actions that support the environment. Good environmental literacy can strengthen things such as self-confidence in carrying out actions and norms held, thereby increasing a person's desire to carry out environmentally friendly behaviors such as reducing, sorting, and repeating (3R) [25].

## CONCLUSION

The results of the study on the relationship between the level of environmental health literacy and pro-environmental behavior in college students, obtained from the Spearman Rank correlation test, showed that there was a strong and significant positive relationship. In other words, the better the level of environmental health literacy that students have, the better the pro-environmental behavior tendency will be. The researcher would like to express his gratitude to all parties who have helped and supported the researcher both mentally and financially so that this research can run smoothly. The researcher also expressed his gratitude to the supervisor, parents, and close friends who always provided encouragement and support. In addition, the researcher also thanked other parties who could not be named one by one.

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