Health literacy profile of high school students based on knowledge, attitude and behavior to health of respiration

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Abstract. This research aims to describe the high school student’s health literacy profile based on their knowledge, attitude, and behavior to health of respiration. This descriptive study involved 65 participants of senior high school students of Ciamis city. Research instruments for collecting data are test and questionnaires sheets. The data were analyzed using quantitative descriptive analysis. The results showed that student’s health literacy of respiration get mean 109.94, moderate category. Based on the above results, it can be concluded that student's health literacy of respiration is enough because student's health literacy are in the moderate category, but it needs to be improved by the classroom learning in accompanied by changing some of the lesser habits in maintaining respiratory health.

1. Introduction

High or low national quality of life can be seen based on education, health and economy [1]. If one of the indicators is not met, then the national quality of life can be said to be still low. Problems in developing countries are still around education, health and economics, so that an effort is needed so that problems can be overcome.

Health literacy is a person's ability or skill in understanding knowledge and applying various behaviors that are good for health. Knowledge, attitude and behavior is a unity that can reflect one's health literacy. Knowledge can affect a person's behavior [1], so if someone has a good knowledge of health, then the behavior in maintaining health will also be good. Students are expected to have good health literacy. Good health literacy, will make students have a sense of responsibility towards the health of themselves, family and society [2].

Health literacy of respiration is the ability of students in understanding and applying respiratory health. Respiratory health was chosen because of the many phenomenon of smoking among adolescents. According WHO, 30% of smokers from all smokers of the world are adolescent [3]. So it becomes evident that adolescent are less concerned about health. The aim of this study is to know at the high school students’ health literacy profile based on knowledge, attitude and students’ behavior to health of respiration.
2. Methods
The research method uses in this research is descriptive method. Descriptive method aims to describe the situation carefully and systematically in accordance with the facts and the nature of a particular population [4]. Subjects was taken from 11th grade public senior high school in Ciamis city. The sample consist 65 student. They were divided into two class, 32 student in class A and 33 student in class B.

Research instruments for collect data are matter of knowledge, and questionnaires sheets (for attitude [5] and students’ behavior). The instrument used 85 item questions, with detail: 27 item of questions about human respiration system, 30 items of attitude questionnaires, and 28 items of behavioral questionnaires. The scores knowledge of human respiration system are 1 and 0. A score of 1 is given if the answer correct and a score of 0 is given if the answer wrong or doesn’t answer. The score attitude questionnaires are using Likert scale, with category very difficult (1), difficult (2), easy (3) and very easy (4). The score behavioral questionnaires are using Guttman scale, with category for positive question, yes (1) and no (0), whereas negative question, yes (0) and no (1). The analysis of data are quantitative descriptive analysis.

This instrument has been validated by using SPSS 22. The transformation of raw scores from the respiratory health literacy test which consists of knowledge, attitude questionnaire and behavioral questionnaire using methods referring to the transformation method used for environmental literacy in transforming the raw scores of students' environmental literacy test results by using MSELS / I. The transformation raw scores of the results of the health literacy test is described in Table 1.

| Components and measures of health literacy | Number of question | Number of items | Range scores | Score maximum |
|-------------------------------------------|--------------------|----------------|--------------|---------------|
| Knowledge                                 | 1-27               | 27             | 0-27         | 27            |
| Structure, mechanism, and disturbance of the human respiration system |                     |                |              |               |
| Attitude                                  | 1-30               | 30             | 30-120       | 120           |
| Attitude in accessing information, understanding information, assessing information and applying health information respiration |                     |                |              |               |
| Behavior                                  | 1-28               | 28             | 0-28         | 28            |
| Behavior responsible for health respiration |                     |                |              |               |
| Total                                     | 85                 | 30-175         | 175          |               |

Knowledge : Range = 0-27, Low = 0-9, Moderate = 10-18, High = 19-27
Attitude : Range = 30-120, Low = 30-60, Moderate = 61-90, High = 91-120
Behavior : Range = 0-28, Low = 0-10, Moderate = 11-19, High = 20-28
Health literacy : Range = 30-175, Low = 30-78, Moderate = 79-126, High= 127-175.

3. Result and Discussion

3.1. Mean health literacy of respiration
Mean of student's respiration health literacy presented in Table 2.

| Aspect            | Value | Mean |
|-------------------|-------|------|
|                   | Class A | Class B | Class A | Class B |
| Knowledge         | 397     | 436   | 12.41   | 13.21   |
| Attitude          | 2579    | 2820  | 80.59   | 85.45   |
| Behavior          | 444     | 473   | 13.88   | 14.33   |
| Amount            | 3420    | 3729  | 106.88  | 112.99  |
| Total             | 7149    | 109.94 |        |        |
Based on Table 2, the results showed that mean of student's respiration health literacy amounted to 109.94, moderate category. The category was obtained based on the range of respiratory health literacy is 30-175, low: 30-78, moderate: 79-126, high: 127-175. Health literacy of respiration is obtained based on the mean pretest result of knowledge, attitude and behavior of students who come from class XI A and B.

3.2. Mean health literacy of respiration based on gender

In this study, the analysis of respiratory health literacy and gender to determine whether there are linkages in both variables. The number of male and female students is 65 students (32 male or 49.23% and 33 female or 50.77%). Health literacy of respiration based on gender can be seen in the figure 1.

![Figure 1. Mean health literacy of respiration based on gender](image1)

Based on Figure 1, the results showed that mean health literacy of respiration based on gender are in moderate category. The category was obtained based on the range of knowledge is 0-27, low: 0-9, moderate: 10-18, high: 19-27. The range of attitude questioner is 30-120, low: 30-60, moderate: 61,89. The range of behavior questioner is 0-28, low: 0-10, moderate: 11-19, high: 20-28.

3.3. Mean health literacy of respiration based on class

The mean results of knowledge, attitudes and behavior of class A and B are in the moderate category, Figure 2. The number of students is 65 (32 class A or 49.23% and 33 class B or 50.77%).

![Figure 2. Mean health literacy of respiration based on class](image2)

Based on Figure 2, the results showed that mean health literacy of respiration based on class are in moderate category. The category was obtained based on the range of knowledge is 0-27, low: 0-9,
moderate: 10-18, high: 19-27. The range of attitude questioner is 30-120, low: 30-60, moderate 61.89. The range of behavior questioner is 0-28, low: 0-10, moderate: 11-19, high: 20-28.

3.4. Mean health literacy of respiration based on smokers and non smokers

Of the 65 students, none of the students had tuberculosis and there were male students who smoked. This is known based on behavior questionnaire results. Students who smoked amounted to 21.54% of 65 students with details in class A of 12.31% or 8 students and in class B of 9.23% or 6 students. The mean health literacy of smoking and non-smoking students in classes A and B is shown in Figure 3.

![Figure 3](image_url)

**Figure 3.** Mean health literacy of respiration based on smokers and non smokers

Based on Figure 3, the results showed that mean health literacy of respiration based on smokers and non-smokers are in moderate category. The category was obtained based on the range of knowledge is 0-27, low: 0-9, moderate: 10-18, high: 19-27. The range of attitude questioner is 30-120, low: 30-60, moderate 61.89. The category was obtained based on the range of behavior is 0-28, low: 0-10, moderate: 11-19, high: 20-28.

3.5. Discussion

Based on research conducted, from 65 sample of research got mean health literacy of respiration equal to 109.94, moderate category (description of category contained in table 1). These results explain that students already have sufficient health literacy especially on respiratory health. Contrast with result of the initial student’s health literacy in Malang which is still low category [7].

There are differences in health literacy in male and female students. Based on knowledge, attitudes and behavior of respiratory health, female students get a larger average score than male students (Figure 1). This is in line with a statement stating that the level of learning achievement of female is better than male [8] [9].

Based on behavioral questionnaires, the total sample of 65 students were 21.54% or 14 students who smoked, with details of 8 students (12.31%) came from class A and 6 students (9.23%) came from class B. In class A and class B, the average knowledge, attitudes and behavior of students who smoke lower than students who do not smoke. The average knowledge, attitude and behavior of students who smoke is 103.14% while the average knowledge, attitude and behavior of students who do not smoke is 111.86% (details contained in Figure 3). Based on these results, it can be concluded that students who smoke have lower health literacy than students who do not smoke. In students who smoke, students’ knowledge is slightly larger than the student's behavior. This is because students who smoke have knowledge about the health of respiration but not applied to everyday life.

4. Conclusions

Based on the above results, it can be concluded that students health literacy of respiration is enough, but it needs to be improved by the classroom learning in accompanied by changing some of the lesser habits in maintaining respiratory health.
5. References

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