The higher level of health literacy among health students compared with non-health students

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Abstract

Objective: To compare the health literacy among health students to non-health students and their related factors.

Methods: This study used cross-sectional design with comparative analysis. The samples were 436 students of Universitas Indonesia. Health literacy was measured by using Health Literacy Questionnaire (HLQ)

Results: The results showed that health students have higher health literacy level than non-health students have (p <0.001). However, all groups of student did not achieve satisfying level of health literacy (score <80% of HLQ total score). The frequency of access to online health information has a significant relationship with the level of health literacy. A student with higher level of health literacy tends to use a reliable source of health information.

Conclusion: Improving online health information seeking skill and providing quality sources of health information may help to increase health literacy level among all group students to reach an optimum level.

Keywords: health information, health literacy, health student, non-health student

Introduction

Health literacy plays an important role to achieve good health status. Health literacy determines a person's ability to access health information, health services and health decision making to attain better health status1. Health literacy focuses on the use of health information in health decision making to improve the health status2. Sun et.al found that health literacy also positively correlate with health behaviors in maintaining good health status3.

Health literacy is determined by several factors including productive age, high education and access in technology4-5. The college student is group of people with productive age, high education and good access in technology. This condition supports them to obtain the high level of health literacy compared with other groups.

However, the resource of relevant information that correlates with the quality of an information influences the level of health literacy6. Person who has more experience in health field can achieve higher level of health literacy. The experience increases a person's exposure to the terms of health, and prior knowledge on health that increases the better understanding of health information7,3. In this case, health student has greater exposure toward health field and have better health information resources. Therefore, this study aimed to identify health literacy comparisons between the group of health students and non-health students.

Method

The study used a cross-sectional design with comparative statistical analysis of 436 first year and third-year undergraduate students. The sampling method used a proportional stratified random sampling of 5 health faculties and 9 non-health faculties at the Universitas Indonesia (UI). Health literacy was measured by using Health Literacy Questionnaire (HLQ).

Results and Discussion

Table 1 shows the overview of demographic characteristics of UI students. UI student mostly comes from Javanese (46.8%), the proportion of non-health student is greater (83.7%). The junior student has a larger proportion (51.6%), student mostly comes from a family with upper-middle income (71.9%).
Table 1 Demographic Characteristic of Respondent (n=436)

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Sunda</td>
<td>54</td>
<td>12.4</td>
</tr>
<tr>
<td>b. Java</td>
<td>204</td>
<td>46.8</td>
</tr>
<tr>
<td>c. Minangkabau</td>
<td>22</td>
<td>5.1</td>
</tr>
<tr>
<td>d. Betawi</td>
<td>24</td>
<td>5.5</td>
</tr>
<tr>
<td>e. Batak</td>
<td>28</td>
<td>6.4</td>
</tr>
<tr>
<td>f. Others</td>
<td>104</td>
<td>23.9</td>
</tr>
<tr>
<td><strong>Student's Cluster</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Health Student</td>
<td>71</td>
<td>16.3</td>
</tr>
<tr>
<td>b. Non-health Student</td>
<td>365</td>
<td>83.7</td>
</tr>
<tr>
<td><strong>Education Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. 3rd-year student</td>
<td>211</td>
<td>48.4</td>
</tr>
<tr>
<td>b. 1st-year student</td>
<td>225</td>
<td>51.6</td>
</tr>
<tr>
<td><strong>Family Income</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Low middle income</td>
<td>79</td>
<td>18.1</td>
</tr>
<tr>
<td>b. Upper middle income</td>
<td>357</td>
<td>71.9</td>
</tr>
</tbody>
</table>

Table 2 shows the comparison of health literacy among students of health and non-health. Medical students had higher levels of health literacy compared with non-medical students ($p < 0.001$). The mean was 148.38 of HLQ for medical students or 75.3% of the total scores, while the average score of students of non-health was 140.06 (71.09%). Both groups of students were still not meet the standards of optimal health literacy which is at least 80% of total score (197).

Table 3 shows the comparative characteristics of health literacy. The ethnicity is categorized into two categories that are ethnic from Java and Non-Java Island, due to the better availability of health access in Java. The results identified that Ethnicity, Education Level, and Family Level Income had no significant effect on health literacy among health student. However, family income level had significant effect toward the level of health literacy on the non-health student ($p < 0.05$).

Table 4 shows the picture of the information sources used by students. Health students in this study tended to access information from the internet through website of healthcare organizations and journals (90.1%) and unreliable domain websites such as .com, blogspot, blog, etc. (70.4%). Students of non-health tended to access information from interpersonal resources like family and friends (69.6%) and unreliable domain websites (64.9%).
Table 6 shows that there is significant relationship between the frequency of health information search through the internet with health literacy on student health ($r = 0.43; p = 0.001$) and non medical students ($r = 0.103; p = 0.048$).

Table 6 Association between Frequency Online Health Information Seeking and Health Literacy (n=436)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean of Frequency online health Information Access</th>
<th>Mean of Health Literacy</th>
<th>r</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Student</td>
<td>4.73</td>
<td>148,38</td>
<td>0.42</td>
<td>0.001</td>
</tr>
<tr>
<td>(n=71)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Health Student</td>
<td>3.16</td>
<td>140,06</td>
<td>0.103</td>
<td>0.048</td>
</tr>
<tr>
<td>(n=365)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*pSignificant at α 5%*

**Comparison the Level of Health Literacy among Health and Non-Health Student**

Health student has higher level of health literacy than non-health student based on the score of HLQ. These results were consistent with previous studies that showed medical students had higher level of health literacy than non-health students8, 9.

Health students have advantages in many aspects to obtain higher level of health literacy compared with non-health students. Health student attains formal education of health from lecturers who have experience working as a health worker who provides trustworthy and quality health information as a health professional. Health student also has good access to health information, a better understanding of medical terms, have prior knowledge in health, more experienced in the field health compared to non-health students7, 10-13. These give student broader opportunity to attain the higher level of health literacy.

Although health student attain higher level of health literacy compared with non-health student, the score of health literacy of the two groups have not achieved the optimal level. The student obtained score less than 80% of the maximum score of HLQ. This meant the result is not satisfying. Analysis question points of HLQ shows that health students were still lacking in point managing time to maintain a healthy lifestyle. The student also has not been able to communicate with health workers about their condition. This indicates that the health student could not convert the understanding of health information and experience in health field into health behavior.

The main problem in non-health student is was the point of navigating reliable information resource. The student also could not decide whether the information is trustworthy or not. The non-health student also could not decide the right health care option as well as health services they need in their current situation.

**Comparison the Level of Health Literacy among Health and Non-Health Student Based on Characteristic**

This study showed that among health student ethnicity, the level of education and family income did not give significant effect on health literacy. The different result in non-health student showed that income level relates with the level of health literacy significantly. Non-health student from Upper middle income had higher health literacy than lower middle- income student. According to the previous study also found that socioeconomic level associated with a low level of health literacy14,15. This is due to high economic level enables the cost of accessing health services which are usually become the barrier to achieve better health service and information15.

The ethnicity did not give significant relation with health literacy in this study is contrast with the previous study in China and USA16,17. Race play a significant role on health literacy due to majority language fluency, access to health care and racism16,17. In this study, the proportion between ethnic which live in Java and other ethnic were not equal. In addition, there was no racism among student at Universitas Indonesia.

The level education in this study also did not have significant relation with health literacy. The previous similar study used Newest Vital Sign (NVS) to identify nursing student ability in obtaining nutrition information in food package at Universitas Indonesia showed the same result18. However, several studies in other countries showed that junior student has lower level of health literacy than senior student18,20. The specific reason for the finding still need to be explored in the further study.

**Health Information Resources**

The results show the online resource used more often compared with other sources of information, especially among health students. This study is consistent with previous research showing that online health resources used more frequently than other sources by students21, 22. Non-health students tend to use interpersonal information sources such as family / friends. The results are consistent with studies in Lebanon that identify the same results23.

Health student prefers to choose the internet as information resources, particularly credible website such us health organization website or health research journal as health information sources due to several factors. Online health seeking behavior requires a good level of knowledge and a good health literacy24. Information from Internet usually requires high reading ability and comprehension25. Health student has a capability of the understanding information based on prior knowledge and knowledge in the field of health. These abilities support them to choose online health information resources.

The phenomena family / friends as of health information main sources of non-health student occur because the student perceives that information from families is more...
trustworthy than information unreliable domain website26. Information from parents is also accessible and easy to understand27. Student is also more convenient to tell health problems to families27. However, the correctness of the information from family/friends is not always at a good level.

**Association between Frequency Online Health Information Seeking and Health Literacy**

The findings of this study indicate that the frequency of online health information seeking significantly related to high level of health literacy. This study obtained similar results with a previous study that identified a positive association between health literacy to online health information seeking27. The use of internet has a positive impact on health literacy. The internet increases the accessibility of health information to improve health literacy. The internet facilitates the access to various resources of health information in a wide range. It increases the opportunity to compare the information with other information as well as see the consistency 29.

**Conclusion**

The study identified that health student had higher level of health literacy compare to non-health student. However, the two group of student had not achieved the optimal score (80% of total score). The study also showed that the frequency of the use of online information and income has a significant relationship with level of health literacy. Student with higher level of health literacy tend to use credible online health information sources to obtain their health information compared with the lower level health literacy who tends to use interpersonal health information sources.

This study has discovered the health literacy level and the related factor among the student. This is the first study about student health literacy in Indonesia. The Universitas Indonesia’s student comes from across the nation, so it can describe the common condition of Indonesian student. However, a broader scope of sample from across the nation is needed to get better description about student’s health literacy in Indonesia. The study has a limitation in exploring the correlation between health literacy and level of education. In addition, relationship between health literacy and quality level of health information sources also need to be explored.

This result of the study showed that UI student’s health literacy level is not optimum. This will affect the ability of health decision making and health status of graduates. In addition, there are differences in level of health literacy among health and non-health students. UI student should have the same level of health literacy so that the quality of graduates is not only good at their expertise, but also health status generally. Health status will influence the graduate’s productivity toward their career. Therefore, improving the student’s health literacy is necessary.

The finding of study suggests the institution to improve the health literacy skill due to the importance of health literacy in affecting health status. Screening health literacy in students should be performed by the Universitas Indonesia for identifying the level of health literacy among students. Then the training of health literacy needs to be held to all the students. In addition, the institution also has to provide reliable online health information resources to improve the quality of student’s health information resources. These efforts can help student to attain high level of health literacy.

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