The Influence of Student-Based Factors on the Differences in Knowledge, Attitudes, and Perceptions of Euthanasia Based on Biology Education

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ABSTRACT

In medical settings, euthanasia is still a controversial practice that continues to elicit international debate. The aim of this study is to examine the influence of student-based factors on the differences in knowledge, attitudes, and perceptions of euthanasia based on biology education in SMA Negeri 1 Banjarbaru and SMA IT Qhardan Hasana high schools. The three primary objectives of the study include to examine the influence of school origin on the knowledge, attitude, and perceptions towards Euthanasia; to examine the influence of parent education on the knowledge, attitude, and perceptions towards Euthanasia; and to examine the influence of parent work on the knowledge, attitude, and perceptions towards Euthanasia. Observational analytics and questionnaires were used for collecting data from students. A total of 186 students was sampled and used for the study. A chi-square test was used in the analysis of the collected data with a degree of confidence of 95%. The findings revealed that students had differences in knowledge (p = 0.0001) and attitudes (p = 0.02) regarding euthanasia in SMA Negeri 1 Banjarbaru and SMA IT Qhardan Hasana high schools. There were no differences in perceptions regarding Euthanasia between the sampled groups. Also, the study found that no differences in knowledge, attitudes, and perceptions about euthanasia exist based on parental education and parental work. The study concludes that school origin, parental work, and parental education are important factors that influence students' knowledge, attitudes, and perceptions towards euthanasia. Based on the findings, the study recommends that the biology education curriculum needs to be synchronized in high schools.

Keywords: euthanasia, knowledge, attitude, perception, students

INTRODUCTION

Euthanasia is the painless termination of a patient’s life. These patients suffer from their diseases and all the members of their social circles accept the fact that they can only be relieved from the pain by death. It is also a requirement that the patient gives his or her unsolicited consent for the doctors to perform Euthanasia (Al Hamarsheh & Mrayyan, 2018). Active euthanasia means that the medical professional administers drugs with the ability to end the life of the permanently sick patient. (Rafi et al., 2019; Falconer et al., 2019). Passive euthanasia occurs when the patient is denied all medical interventions, indirectly leading to death (Ulas Karahmetoglu & Kutahyaligoi, 2019). In this case, a team of doctors opts to subject a patient to euthanasia when he or she is no longer able to beg (Dinata, Adiputra, & Mursito, 2020).

Technology continues to tighten its grip on society and there have been numerous variations in the health care system, leading to gradual changes in the attitudes and perceptions of different members of society toward the acceptance of euthanasia (Fontalis, Prousadi, & Kulkarni, 2018; Falconer et al., 2019). The developments in medical technologies have also increased the prolongation of patients’ stay in hospitals, the demand for technology supporting life during old age as well as chronic diseases (Sprung et al., 2018; Ulas Karahmetoglu & Kutahyaligoi, 2019). Moreover, keeping terminally ill patients alive for longer periods has generated numerous ethical concerns (Goligher et al., 2017; Kim, Moon, & Nam, 2017; Fontalis, Prousadi, & Kulkarni, 2018; Choi & Jeong, 2018). Therefore, there has been massive dissatisfaction and different attitudes about end-of-life care, triggering heated debates about euthanasia (Brandalise et al., 2018; Ulas Karahmetoglu & Kutahyaligoi, 2019; Kaplan, 2019). Many countries around the world, including the United States, India, and Australia, are increasingly legalizing Euthanasia (Faneye, 2019). However, many Islamic countries are still reluctant to accept the idea on the basis that it contraveses Islamic teachings (Rafiei & Alipour, 2017; Ahaddour, Van den Branden, & Broeckaert, 2018; Anthony & Sterkens, 2019). The implication is that religious and other social backgrounds influence people’s knowledge, perceptions, and attitudes towards Euthanasia. Every country approaches the issue based on its background and history. For example, in the United States, some states, such as Oregon and Washington, have legalized passive Euthanasia (Larsen, 2018; Faneye, 2019). In Indonesia, Euthanasia is an illegal practice. According to Hermanto (2017), Article 344 of the Indonesian constitution expressly prohibits Euthanasia. The article states that any person “who takes the life of another person at the request of a firm and solemnly from another person itself is punishable by imprisonment for a period of 12 years.” Due to the existence of stringent legal provisions in Indonesia, passive and active Euthanasia is banned (Solayan, 2017; Rifai, Wardoyo, & Rifai, 2018). Although the practice occurs incognito in different communities, it does not get the attention of the media and the authorities. The application of Euthanasia in Indonesia is also triggered by the fact that the rate of terminal late diseases, including diabetes, stroke, and cancer, is on the rise (Putranto et al., 2017; Rahajeng, Sulistiwati, & Kusumaawardhani, 2020). Notably, when patients are subjected to unbearable pain and suffering without the hope of healing, various parties, including patients, medical practitioners, and patient’s families, are subjected to...
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SIGNIFICANCE AND IMPLICATIONS OF THE STUDY

From a theoretical point of view, the results of the study will advance the knowledge on the study of the socio-demographic and educational influences on the perception and attitudes of euthanasia. Empirically, the findings from the study will contribute to the knowledge by addressing the empirical gaps in the topic. Policymakers will also use the findings of the study in designing the curriculum of biology education in high schools while focusing on the critical and cognitive aspects.

RESEARCH QUESTIONS

1) What is the influence of school origin on students' knowledge, attitude, and perceptions towards Euthanasia?
2) What is the influence of parent education on students' knowledge, attitude, and perceptions towards Euthanasia?
3) What is the influence of parents' work on students' knowledge, attitude, and perceptions towards Euthanasia?

RESEARCH OBJECTIVES

1) To examine the influence of school origin on the knowledge, attitude, and perceptions towards Euthanasia.
2) To investigate the influence of parent education on the knowledge, attitude, and perceptions towards Euthanasia.
3) To examine the influence of parents’ work on the knowledge, attitude, and perceptions towards Euthanasia.

**RESEARCH METHODOLOGY**

The study used a descriptive study design that focuses on describing the behavior. The design was appropriate for this study because its aim was to examine attitudes, perceptions and knowledge levels. Overall, the study was cross-sectional. The participants in the study included students from one public high school and one Islamic high school. The researchers adopted a purposive sampling technique in selecting 97 students from SMA Negeri 1 Banjarbaru and 99 students from SMA Islam Terpadu Qhardan Hasan. Because the study was focused on examining euthanasia from the perspective of public high schools and Islamic high schools, the students were appropriate respondents to provide insightful information. They were sampled purposively.

Qualitative data was collected using observational analytics while quantitative data was collected using a questionnaire. These data collection tools were effective because the sample was large and qualitative data was collected.

The study utilized both primary and secondary data. Primary data was collected using questionnaires and observations while secondary data was collected from previous studies, databases, publications, and other reports relating to the topic. Secondary data was primarily used for review of the literature.

During the data collection, students were issued with the questionnaires after being briefed on the objectives of the study and taken through a consenting process. Only students who gave their consent were allowed to proceed with the filling of the questionnaires. The observational analytics entailed attending biology lessons in both the schools and noting the students’ reactions during the teaching of euthanasia topics.

Collected data were analyzed using the chi-square test with a 95% confidence level to assess differences in knowledge, attitudes, and perceptions between students of SMA Negeri 1 and SMA Islam Terpadu Qhardan Hasan. The data was transcribed and presented in the form of tables and percentages.

**RESULTS**

The influence of school origin on the knowledge, attitude, and perceptions towards Euthanasia

Table 1 to Table 3 present the Chi-square test results of differences in knowledge, attitude, and perceptions of euthanasia between the public high school and the Integrated Islamic High School.

<table>
<thead>
<tr>
<th>School name</th>
<th>Euthanasia Knowledge level</th>
<th>Total</th>
<th>Value of p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Good</td>
<td>Lacking</td>
<td></td>
</tr>
<tr>
<td>SMA Negeri 1 Banjarbaru</td>
<td>78 (80.4%)</td>
<td>19 (19.6%)</td>
<td>97 (100%)</td>
</tr>
<tr>
<td>SMA IT Qhardan Hasan</td>
<td>45 (45.5%)</td>
<td>54 (54.5%)</td>
<td>99 (100%)</td>
</tr>
</tbody>
</table>

Findings from Table 1 above show that euthanasia knowledge of SMA Negeri 1 Banjarbaru (80.4%) students is better than that of SMA IT Qhardan Hasan (45.5%) students. The Table also shows that there is an increased lack of knowledge at IT High School Qhardan Hasan (54.5%) than at SMA Negeri 1 Banjarbaru (19.6%). Chi-square test results show the value of p = 0.0001 (p <0.05), indicating that SMA Negeri 1 Banjarbaru students were more knowledgeable on euthanasia than SMA IT Qhardan Hasan students.

<table>
<thead>
<tr>
<th>School name</th>
<th>Attitude towards Euthanasia</th>
<th>Total</th>
<th>Value of p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive</td>
<td>Negative</td>
<td></td>
</tr>
<tr>
<td>SMA Negeri 1 Banjarbaru</td>
<td>4 (4.1%)</td>
<td>93 (95.9%)</td>
<td>97 (100%)</td>
</tr>
<tr>
<td>SMA IT Qhardan Hasan</td>
<td>18 (182%)</td>
<td>81 (81.8%)</td>
<td>99 (100%)</td>
</tr>
</tbody>
</table>

Table 2 shows that there are more positive attitudes towards euthanasia in SMA IT Qhardan Hasan (18.2%) compared to SMA Negeri 1 Banjarbaru (4.1%). Also, negative attitudes were more at SMA Negeri 1 Banjarbaru (95.9%) compared to SMA IT Qhardan Hasan (81.8%). Chi-square test results showed the value of p = 0.02 (p <0.05). This suggests that there were differences in the attitudes of SMA Negeri 1 Banjarbaru students compared to SMA IT Qhardan Hasan students.

<table>
<thead>
<tr>
<th>School name</th>
<th>Perception about Euthanasia</th>
<th>Total</th>
<th>Value of p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive</td>
<td>Negative</td>
<td></td>
</tr>
<tr>
<td>SMA Negeri 1 Banjarbaru</td>
<td>40 (41.2%)</td>
<td>57 (58.8%)</td>
<td>97 (100%)</td>
</tr>
<tr>
<td>SMA IT Qhardan Hasan</td>
<td>40 (40.4%)</td>
<td>59 (59.6%)</td>
<td>99 (100%)</td>
</tr>
</tbody>
</table>
The findings from Table 3 show that there were more positive perceptions of euthanasia among students from SMA Negeri 1 Banjarbaru (41.2%) compared to those from SMA IT Qhardan Hasana (40.4%). Also, there were more negative perceptions of euthanasia among learners from SMA IT Qhardan Hasana (59.6%) compared to those from SMA Negeri 1 Banjarbaru. Chi-square test results showed the value of \( p < 0.05 \). The implication is that there were no differences in perceptions about euthanasia between high school students and integrated Islamic students. The influence of parent education on the knowledge, attitude, and perceptions towards Euthanasia

Table 4 to Table 6 present the Chi-square test results of the differences in knowledge, attitude, and perceptions of euthanasia based the parent's education.

### Table 4: Difference in knowledge of Euthanasia based on the parent's education

<table>
<thead>
<tr>
<th>Parent's education</th>
<th>Knowledge level of Euthanasia</th>
<th>Total</th>
<th>Value of p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Good</td>
<td>Lacking</td>
<td></td>
</tr>
<tr>
<td>Under Bachelor's degree</td>
<td>32 (65.3%)</td>
<td>17 (34.7%)</td>
<td>49 (100%)</td>
</tr>
<tr>
<td>Bachelor's degree</td>
<td>91 (61.9%)</td>
<td>56 (38.1%)</td>
<td>147 (100%)</td>
</tr>
</tbody>
</table>

Findings from Table 4 above show that there is more good knowledge of euthanasia among students whose parents are bachelor's degree holders as indicated by 65.3% of the respondents. 61.9% of the students whose parents had no bachelor's degree had good knowledge of euthanasia. The findings also show that the lack of knowledge on euthanasia was more in students whose parents had no bachelor's degrees (38.1%) compared to those whose parents were bachelor's degree holders (34.7%). Chi-square test results show the value of \( p < 0.067 \) (\( p < 0.05 \)). The implication is that there was no difference in knowledge about euthanasia between students whose parents' education was bachelor's degree and non-bachelor's degree holders.

### Table 5: Difference in attitude based on Parent's education

<table>
<thead>
<tr>
<th>Parents Education</th>
<th>Attitude towards Euthanasia</th>
<th>Total</th>
<th>Value of p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Negative</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Non Bachelor</td>
<td>46 (93.9%)</td>
<td>3 (6.1%)</td>
<td>49 (100%)</td>
</tr>
<tr>
<td>Bachelor</td>
<td>128 (87.1%)</td>
<td>19 (12.9%)</td>
<td>147 (100%)</td>
</tr>
</tbody>
</table>

Findings from Table 5 show that 93.9% of the students whose parents had no bachelor's degrees had negative attitudes towards euthanasia while 87.1% of the students whose parents had bachelor's degrees had the same attitudes. Also, the findings indicate that 12.9% of the students with degree holder parents had positive attitudes towards euthanasia compared to 6.1% students with non-bachelor's degree holder parents. Chi-square test results showed a value of \( p = 0.191 \) (\( p < 0.05 \)), indicating that there were no significant differences in attitudes about euthanasia between students whose parents were bachelor's degree holders and those with non-bachelor's degree holder parents.

### Table 6: Difference in perception on Euthanasia based on the parent's education

<table>
<thead>
<tr>
<th>Parent's education</th>
<th>Perception on Euthanasia</th>
<th>Total</th>
<th>Value of p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Negative</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Non Bachelor</td>
<td>29 (59.2%)</td>
<td>20 (40.8%)</td>
<td>49 (100%)</td>
</tr>
<tr>
<td>Bachelor</td>
<td>87 (59.2%)</td>
<td>60 (40.8%)</td>
<td>147 (100%)</td>
</tr>
</tbody>
</table>

Findings from Table 6 indicate that the proportion of negative attitudes is the same between students with undergraduate parents and those with non-undergraduate parents (59.2%). Also, findings show that the proportion of positive attitudes towards euthanasia is the same between students with undergraduate and those with non-undergraduate parents (40.8%). Chi-square test results showed a value of \( p = 1.000 \) (\( p < 0.05 \)), implying that there were no significant differences in perceptions about euthanasia between students whose parents were bachelor's degree holders and those without degrees.

The influence of parent work on the knowledge, attitude, and perceptions towards Euthanasia

Table 7 to Table 9 present the Chi-square test results of the differences in knowledge, attitude, and perceptions of euthanasia based the parent's work or job.

### Table 7: Difference of knowledge on Euthanasia based on the parent's work

<table>
<thead>
<tr>
<th>Parent's Job</th>
<th>Knowledge on euthanasia</th>
<th>Total</th>
<th>Value of p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>good</td>
<td>lacking</td>
<td></td>
</tr>
<tr>
<td>Government Employees</td>
<td>86 (61%)</td>
<td>55 (39%)</td>
<td>141 (100%)</td>
</tr>
<tr>
<td>Private employees</td>
<td>37 (67.3%)</td>
<td>18 (32.7%)</td>
<td>55 (100%)</td>
</tr>
</tbody>
</table>
Findings from Table 7 show that the good knowledge is more in students with private employed parents (67.3%) than those with government employed parents (61%). Also, less good knowledge is more for students with government employed parents (39%) than those with private employed parents (32.7%). Chi-square test results showed the value of $p = 0.414$ ($p > 0.05$), implying that there was no difference in knowledge about euthanasia between students whose parents are civil servants and those with parents employed in the private sector.

<table>
<thead>
<tr>
<th>Parent's job</th>
<th>Attitude towards Euthanasia</th>
<th>Total</th>
<th>Value of $p$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Negative</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Government employed</td>
<td>122 (86.5%)</td>
<td>19 (13.5%)</td>
<td>141 (100%)</td>
</tr>
<tr>
<td>Private employed</td>
<td>52 (94.5%)</td>
<td>3 (5.5%)</td>
<td>55 (100%)</td>
</tr>
</tbody>
</table>

Findings from Table 8 show that students with privately employed parents have more negative attitudes towards euthanasia (94.5%) compared to those with government employed parents (86.5%). Also, findings show that positive attitudes towards euthanasia were more for students with government employed parents (13.5%) than those with privately employed parents (5.5%). Chi-square test results showed a value of $p = 0.110$ ($p > 0.05$), suggesting that there were no significant differences in attitudes about euthanasia between students with government employed parents and those with private employed parents.

<table>
<thead>
<tr>
<th>Parents job</th>
<th>Perception on Euthanasia</th>
<th>Total</th>
<th>Value of $p$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Negative</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Government employed</td>
<td>85 (60.3%)</td>
<td>56 (39.7%)</td>
<td>141 (100%)</td>
</tr>
<tr>
<td>Private employed</td>
<td>31 (56.4%)</td>
<td>24 (43.6%)</td>
<td>55 (100%)</td>
</tr>
</tbody>
</table>

Findings from Table 9 show that the 60.3% of the students whose parents were government employed had negative attitude towards euthanasia while 56.4% of those with private employed parents had the same attitudes. Also, findings show that positive perceptions towards euthanasia were higher for students with privately employed parents (43.6%) compared to those with government employed (39.7%). Chi-square test results showed a value of $p = 0.616$ ($p > 0.05$), indicating that there were no differences in perceptions about euthanasia between parents whose government employed and private employed.

**DISCUSSION OF RESULTS**

The study revealed that the euthanasia knowledge of SMA Negeri 1 Banjarbaru students is better than that of SMA IT Qharden Hasana students. These findings are associated with the fact that in SMA IT Qharden Hasana, students are provided with less concepts of euthanasia in their biology curriculum. According to the findings of the study, students from SMA Negeri 1 Banjarbaru held more negative attitudes towards euthanasia than those from SMA IT Qharden Hasana. Also, it was revealed that there were no significant differences in students’ perceptions about euthanasia between high school students and integrated Islamic students. These findings conform to those of Yildirim (2019) who found that Islamic beliefs affect the knowledge, views, and behavior of advanced students because Islam is more concerned with the protection of life.

The study revealed that students whose parents are bachelor's degree holders are more knowledgeable on euthanasia than those whose parents had no bachelor's degrees ($p = 0.67$). The study revealed that there were no significant differences in attitudes about euthanasia between students whose parents were bachelor's degree holders and those with non-bachelor degree holder parents ($p = 0.191$). Previous findings by Lee, Duck, & Sibley (2017) show that people with higher education tend to support euthanasia compared to those with lower education. According to Terkamo-Moisio et al. (2017), attitude is a predictor of behavior, both in approaching and avoiding it. In the case of euthanasia, these behaviors can be both supportive and non-supportive. Further, the study revealed that there were no significant differences in perceptions about euthanasia between students whose parents were bachelor degree holders and those without degrees ($p = 1.000$). This finding conforms to that of Lee & Kim (2020) who found that people perceive objects around them based on the influences in their surroundings, including religious beliefs and educational content they receive.

The study found that there was no difference in knowledge about euthanasia between students whose parents are civil servants and those with parents employed in the private sector ($p = 0.414$). Also, there were no significant differences in attitudes about euthanasia between students with government-employed parents and those with privately employed parents ($p = 0.110$). The results also show that there were no differences in perceptions about euthanasia between parents whose government employed and privately employed ($p = 0.616$). Previous findings show that people with high incomes tend to support euthanasia compared to groups with lower incomes (Lee, Duck, & Sibley, 2017). However, one’s perceptions and attitudes towards euthanasia are more influenced by psycho-emotional than financial aspects (Rios-Gonzalez et al., 2018).
CONCLUSION
Although this study utilized non-purposive sampling that may suffer the risk of lack of representatives, important findings have been drawn. Based on the findings of the study, there are differences in knowledge and attitudes about euthanasia between SMA Negeri 1 Banjarbaru and IT Qhardan Hasana High School. There is no difference in perceptions about euthanasia between SMA Negeri 1 Banjarbaru and IT Qhardan Hasana High School, and there is no difference in knowledge, attitudes, and perceptions about euthanasia based on parental education and parental work.

RECOMMENDATIONS
Policymakers need to focus on synchronizing the biology education syllabus and promote the intensification of education on euthanasia. Students from all backgrounds need to have detailed knowledge of the practice for them to make informed decisions in the future. Future studies need to investigate the overall public views on euthanasia in Indonesia, especially considering the highly educated people and those with higher incomes support it. There is a need for empirical evidence at the national to guide policy on the legalization of euthanasia in Indonesia.

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