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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

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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 Ilamarsheh & Mrayyan, 2018). Active euthanasia means that the medical professional administers drugs with the ability to end the life of the perennially 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 Karaahmetoglu & Kutahyalioğlu, 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, Prousalis, & 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 Karaahmetoglu & Kutahyalioğlu, 2019). Moreover, keeping terminally ill patients alive for longer periods has generated numerous ethical concerns (Goligher et al., 2017; Kim, Moon, & Nam, 2017; Fontalis, Prousalis, & 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 Karaahmetoglu & Kutahyalioğlu, 2019; Kaplan, 2019). Many countries around the world, including the United States, India, and Australia, are increasingly legalizing Euthanasia (Faney, 2019). However, many Islamic countries are still reluctant to accept the idea on the basis that it contravenes Islamic teachings (Rafiei & Alipour, 2017; Ahaddour, Van den Branden, & Broeckeaert, 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; Faney, 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 (Sofyan, 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, Sulistiowati, & Kusumawardhani, 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

dilemmas (Putra & Achmad, 2019; Levin, Bradley, & Duffy, 2020). As a result, euthanasia is an emotive issue, and it requires a detailed examination from the perspective of different members of society (Strupp et al., 2019). The student body is an important element in this discussion of the available options because their views influence future policies and practices (Bulut, 2017).

In educational settings, biology textbooks and curriculums try to develop different concepts and perspectives, including euthanasia (Calado, 2018). Certainly, students need to be knowledgeable about the practice of euthanasia for them to critically examine the practice as it relates to the realities of everyday life (Rios-González et al., 2018; Rodríguez-Calvo et al., 2019). SMA Negeri 1 Banjarbaru and SMA IT Qhardan Hasana are two advanced high schools in South Kalimantan. The former is a public high school while the latter is an Islamic high school. These two institutions of learning use different approaches in the provision of education services. On the one hand, SMA Negeri 1 uses a national curriculum as provided for by the Ministry of Education and Culture. On the other hand, SMA IT Qhardan Hasana adopts a curriculum from the Ministry of Education and Culture but it has been modified by the Ministry of Religion, especially on Islamic aspects. Due to the disparities in the educational curriculum, various cognitive, affective, and perception differences exist among the students from the two high schools (Rios-González et al., 2018).

The lack of cognitive uniformity in the understanding of euthanasia is founded on the knowledge that the students gained from the two different schools, different lesson structures. These differences are also associated with varied experiences of students from families that have suffered severe illnesses. Cognitive differences are influenced by knowledge, experiences and life conditions. Greifeneder, Bless, & Fiedler (2017) explained the behavior of a person is directly influenced by attitudes gained through experience. Also, Özsoy, Memiş, & Temur (2017) found that attitude can function as a fundamental source of knowledge. The knowledge that a person has helps him or her interpret new stimuli and respond appropriately to varied circumstances or information (Lee et al., 2019). Moreover, the affective component of attitude, affects how people respond to issues relating to the implementation of euthanasia (Husain et al., 2019). Another critical point of difference among students is the aspect of perception. This aspect relates to people's tendency to act on the object that they face. In this case, this object can involve developing an attitude regarding the practice of euthanasia in Indonesia (Lee & Kim, 2020; Anthony & Sterkens, 2019).

Ulas Karaahmetoglu & Kutahyalioğlu (2019) examined the attitudes of Turkish university students towards Euthanasia. The researchers found significant disparities in students' attitudes depending on their gender, age, course of study, living conditions, family status, and levels of income. Vijayalakshmi et al (2018) found that demographic factors, including gender, influence attitudes towards euthanasia. However, this study did not consider school origin, parents' education, and parents' occupation. Bulut (2017) assessed the views regarding euthanasia among students attending to

the elderly at Bingöl University. According to the findings of the study, 75.2% of the respondents believed that they had insufficient knowledge regarding euthanasia while 20.5% of the participants did not consider the perception that they had enough knowledge. These findings indicate that there are serious knowledge gaps on Euthanasia among students. However, this study did not focus on categorizing student attitudes based on their family backgrounds.

Existing studies did not narrow down to examining the different socio-demographic and educational aspects and how they influence students' perceptions of euthanasia (e. g. Kumar et al., 2017; Rafici & Alipour, 2017; Nepal, Alreya, & Kanchan, 2017; Miltiades, 2019; Green et al., 2020). Also, existing studies do not address the religious realities in Indonesia, and they were conducted in other countries (Jones, Gastmans, & MacKellar, 2017). Therefore, their findings cannot be generalized to represent the situation in the Indonesian context. These prior studies were only focused on universities, but the perspectives of high school students have not been considered. Thus, the primary 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 Islam Terpadu Qhardan Hasana high schools. The study seeks to address the existing gaps by interrogating into high school students' perspectives as influenced by their school origin and family backgrounds. No prior study has delved into investigating the perspectives and attitudes of euthanasia by considering religious orientations and family incomes of high students.

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.

4 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 Hasana. 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 Hasana. 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 1. The difference in knowledge about Euthanasia in a Public school and an Islamic School.

School name	Euthanasia Knowledge level		Total	Value of p
	Good	lacking		
SMA Negeri 1 Banjarbaru	78 (80.4%)	19 (19.6%)	97 (100%)	0,0001
SMA IT Qhardan Hasana	45 (45.5%)	54 (54.5%)	99 (100%)	

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 Hasana (45.5%) students. The Table also shows that there is an increased lack of knowledge at IT High School Qhardan Hasana (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 Hasana students.

Table 2. The difference in attitude towards Euthanasia between the public school and the Islamic school.

School name	Attitude towards Euthanasia		Total	Value of p
	Positive	Negative		
SMA Negeri 1 Banjarbaru	4 (4.1%)	93 (95.9%)	97 (100%)	0.02
SMA IT Qhardan Hasana	18 (18.2%)	81 (81.8%)	99 (100%)	

Table 2 shows that there are more positive attitudes towards euthanasia in SMA IT Qhardan Hasana (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 Hasana (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 Hasana students.

Table 3. Difference in perception about Euthanasia between the public school and the Islamic school.

School name	Perception about Euthanasia		Total	Value of p
	Positive	Negative		
SMA Negeri 1 Banjarbaru	40 (41.2%)	57 (58.8%)	97 (100%)	0,906
SMA IT Qhardan Hasana	40 (40.4%)	59 (59.6%)	99 (100%)	

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 $p = 0.906$ ($p > 0.05$). 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

Parent's education	Knowledge level of Euthanasia		Total	Value of p
	Good	Lacking		
Under Bachelor's degree	32 (65.3%)	17 (34.7%)	49 (100%)	0.67
Bachelor's degree	91 (61.9%)	56 (38.1%)	147 (100%)	

Findings from Table 4 above show that 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 $p = 0.67$ ($p > 0.05$). 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.

Parents Education	Attitude towards Euthanasia		Total	Value of p
	Negative	Positive		
Non Bachelor	46 (93.9%)	3 (6.1%)	49 (100%)	0.191
Bachelor	128 (87.1%)	19 (12.9%)	147 (100%)	

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

Parent's education	Perception on Euthanasia		Total	Value of p
	Negative	Positive		
Non Bachelor	29 (59.2%)	20 (40.8%)	49 (100%)	1.000
Bachelor	87 (59.2%)	60 (40.8%)	147 (100%)	

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

Parent's Job	Knowledge on euthanasia		Total	Value of p
	good	lacking		
Government Employees	86 (61%)	55 (39%)	141 (100%)	0.414
Private employees	37 (67.3%)	18 (32.7%)	55 (100%)	

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 8: Difference of attitude on Euthanasia based on the parent's job

Parent's job	Attitude towards Euthanasia		Total	Value of p
	Negative	Positive		
Government employed	122 (86.5%)	19 (13.5%)	141 (100%)	0.110
Private employed	52 (94.5%)	3 (5.5%)	55 (100%)	

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 paren

Table 9: Difference of Perception on Euthanasia based on the parent's job

Parents job	Perception on Euthanasia		Total	Value of p
	Negative	Positive		
Government employed	85 (60.3%)	56 (39.7%)	141 (100%)	0.616
Private employed	31 (56.4%)	24 (43.6%)	55 (100%)	

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.

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 percept objects around them based on the influences in their surroundings, including religious beliefs and educational content they receive.

DISCUSSION OF RESULTS

The study revealed that the euthanasia knowledge of SMA Negeri 1 Banjarbaru students is better than that of SMA IT Qhardan Hasana students. These findings are associated with the fact that in SMA IT Qhardan 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 Qhardan 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

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-González 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 is a difference 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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