

ORIGINAL ARTICLE

Knowledge, attitudes, and behavior of Health Sciences students toward organ donation

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Abstract:

Organ donation rates decrease in need worldwide. Malaysia also suffers from a chronic shortage of organs for transplantation. Health Sciences Students are future health care professionals which to raise the donation rates, their knowledge, attitude, and behavior toward organ donation are crucial. The aim of this study is to identify the level of knowledge, attitudes, and behavior of Health Sciences Students in UiTM Puncak Alam toward organ donation. This is a cross-sectional study design. Using a convenience sampling and modified self-administered questionnaire from a total of 312 respondents in UiTM Puncak Alam. Majority respondents (53.5%, n=167) had good knowledge, and all (100%, n=312) are aware of organ donation. However, only less than half of the participants (45.8%, n=143) showed a positive attitude toward organ donation. 128(41%) of respondents have favorable behavior toward organ donation. Results from correlation revealed that having good knowledge does not correlate to either positive attitudes or favorable behavior; however, positive attitudes had shown correlated to favorable behavior toward organ donation. The study revealed that the attitudes and behavior of the respondents toward organ donation are not proportional to the level of knowledge they possess. Therefore, better educational plans on organ donation among students are needed.

Keywords: attitudes; behavior; health sciences students; knowledge; organ donation

1. INTRODUCTION

Organ donation is a surgical procedure for the removal of organs from a donor for transplantation. While organ transplantation is the replacement of diseased and damaged organs, it is an established treatment for end-stage organ failure [1]. Organ transplantation has saved or improved the lives of hundreds and thousands of recipients world-widely [2]. Not only it raised life-years gained, but it could also beneficial in generates the economy [3]. Furthermore, organ donation could lengthen life expectancy and generally boost life condition [4]. Organ donation also is the best option that benefits the patient with renal failure in terms of cost-effectiveness and improved quality of life [5].

However, the request for organs for transplantation continuously exceeds the limited supply of organs all over the world [6]. There is a disproportion among the individuals that need organ transplantation and obtainable organs [7].

The shortage of organs for transplantation remains a severe global problem [8]. The difference among the number of organ donors and the patients awaiting transplantation widen each year [9]. It is agreed that the gap between organ supply and demand for transplants is a global concern [10]. In 2013, Malaysia reported a shallow deceased donation rate of 0.5 per million populations (PMP) [11].

One of the factors that contribute to the limited availability of organ donors is due to lack of knowledge about legal and procedural details of organ donation in the general populations and especially among healthcare provider [12]. The rate of organ donations from deceased donors in Malaysia is among the lowest in the world may be caused by passivity among health professionals in approaching families of potential donors [13]. There is a lack of awareness and correct knowledge among public, myths and misconception surrounding organ donation due to religious and cultural barriers leading to hesitancy in the donation of a human organ [6]. The lack of awareness among healthcare workers has been recognized as a barrier and is essential to successful organ donation [14].

Medical and nursing students are future health personnel, and thus their attitude toward organ donation is also of enormous importance [15]. There is a great need for increasing awareness about organ transplantation and organ donation among the general public, beginning with the health-care professionals who in turn, can motivate the public [16]. Besides, supposedly, the group of professionals that must be most knowledgeable in the area of organ donation is health care providers [17].

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A study showed the success of an organ transplantation program can be ensured if the health professionals play a dominant role [18]. Also, the study showed that positive attitude on organ donation among patients increases if the patient knows that the willingness to donate organs is among doctors [19]. Health professionals serve as a role model and promote organ donation to the general public [20]. Besides, health professionals play a crucial part in the delivery of information regarding organ donation and brain death for the public [21].

2. MATERIAL AND METHOD

2.1 Study Design and Setting

A cross-sectional study was conducted at the Faculty of Health Sciences, UiTM Selangor, Puncak Alam Campus.

2.2 Participants and Sample Size

The study was conducted using a convenience sampling method among the full-time degree undergraduate of Health Sciences Students from the Faculty of Health Sciences UiTM Puncak Alam.

Raosoft Sample Size Calculator software was used to calculate the sample size with population size (N) of 1631 students. To determine the sample size, the margin error accepted was set to 5% and a confidence interval of 95%. The suggested sample size (n) for this study was 312.

2.3 Ethical Consideration

Approval to conduct the study was obtained from UiTM Research Ethics Committee-600-IRMI(5/61/6). On distribution, the questionnaire was accompanied with both an information sheet (detailing the purpose of the study, the reason for the invitation, and a declaration of data anonymity) and an informed consent form, which they signed before proceeding to complete the questionnaire and their identities were kept confidential.

2.4 Data Collection

The distribution of the questionnaires started on 16 March 2019 and ended on 25 March 2019. The time given for the respondents to answer the questionnaires was 15-20 minutes. Thus, every single respondent already had leisure time to answer the entire questions. The researcher asked the respondents to return the questionnaires on the dateline given through the class representatives for each course. Then, the questionnaire needs to return to the researchers after respondents completed it. The collected questionnaires are then being checked for completeness. For any incomplete questions, the respondents must complete it. Once, it completed, the data will be entered, cleaned and analyzed.

2.5 Research Instruments Tools

The questions derived from pre-existing, validated, and previously tools, such as the Organ Donation Attitude Scale. The Cronbach alpha for these instruments is 0.89 for the positive scale and 0.82 for negative scale. Thus, has adequate subscale reliability. The tool used for research instrument is a self-administered, structured questionnaire which consists of 24 items divided into 4 sections, including both closed questions and Likert-type scale. The first part (3 items) asks about the participant's sociodemographic information such as gender, course of study, a semester of study. The second part (6 items) and was aimed to investigate general knowledge toward organ donation and transplantation. This was achieved through the use of closed-ended questions with a response as either "yes" or "no". The attitude part covered 11 questions that were aimed to assess students' attitudes toward organ donation.

Last, the fourth part contained four items, and it queried the behavior of the students regarding organ donation. For the third and fourth parts, a statement was used to establish factors and associations, for example, "Organ donation is against my religion", "I am willing to pledge as an organ donor in Malaysia" and "I am willing to receive a transplant if necessary". The participants were requested to indicate their level of agreement to these statements on a 5-pointed Likert-type scale (strongly agree, agree, undecided, disagree, and strongly agree).

2.6 Data Analysis

The Statistical Package for Social Sciences (SPSS) version 21.0 were used to enter and analyze the data. Both descriptive and inferential statistical test used in the analysis. The descriptive analysis involved the running frequency and the percentage of a test of all the key variable. Also, the test of associations conducted by the use of a correlation test. Spearman correlation test was used to determine the correlation between the level of knowledge, attitudes, and behavior regarding organ donation with P-value of <.05 was considered significant.

3. RESULTS

3.1 Demographics

Overall, 312 of Health Sciences students participated in the study. A total of 40 were male, accounting for 12.8% of the 312 respondents, and 272 were female, accounting for 87.5%. Next, 39 questionnaires were equally distributed to eight courses which results in 12.5% correspondingly to each course. The majority (46.2%, n=144) of respondents are from semester 6, followed by semester 4 (33.3%, n=104). Only 45(14.4%) respondents were from semester 2 which give a percentage of 14.4%, followed by the least was from semester 8 which only (6.1%, n=19).

Table 3.1: *Socio-demographic data of respondents*

Variables	Frequency (n)	Percentage (%)
Gender		
Male	40	12.8
Female	272	87.2
Course of study		
Environmental Health	39	12.55
Medical Imaging	39	12.5
Medical Laboratory Technology	39	12.5
Nutrition and Dietetics	39	12.5
Nursing	39	12.5
Occupational Therapy	39	12.5
Optometry	39	12.5
Physiotherapy	39	12.5
Semester of study		
Two	45	14.4
Four	104	33.3
Six	144	46.2
Eight	19	6.1
Total	312	100.00

Regarding the sources of information, social media is the most popular source of information with 274(87.8%) of the respondents choose it as their main source of information about organ donation. The audiovisual media such as television (83.3%, n=260), newspaper (51.3%, n=160), followed by friends (45.5%, n=142), healthcare worker (44.6%, n=139) and radio (35.6%, n=111) likewise can be categorized as the major source of information about organ donation. The least mentioning regarding the source of information are family members (28.8%, n=90), followed by others, which only (10.6%, n=33) as shown in Figure 3.2.

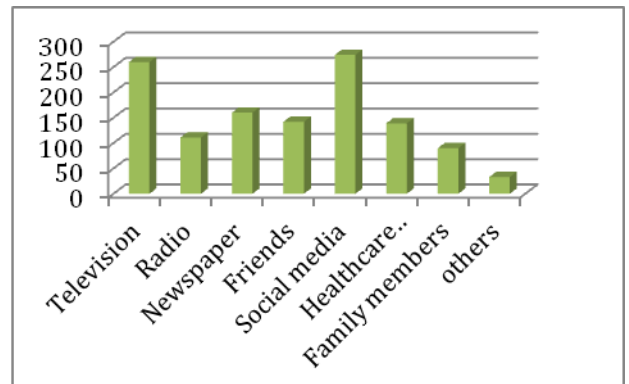


Figure 3.2: Participant's sources of information about organ donation

About (96.8%, n=302) of respondents were aware that organ transplantation being conducted in Malaysia. However, the majority of participants neither knew a person who received a transplant (85.6%, n=267) nor an organ donor (87.5%, n=273) as shown in Table 3.2..

Table 3.2

Responses of Participants to Questions on Knowledge toward Organ Donation

Statement	Yes n(%)	No n(%)
Do you know someone who had a transplant?	45(14.4)	267(85.6)
Do you know someone who donated an organ?	39(12.5)	273(87.5)
Is organ transplant being conducted in Malaysia?	10(3.2)	302(96.8)

3.2. Knowledge Towards Organ Donation

The majority of the respondents (53.5%, n=167) had good knowledge of organ donation while (46.5%, n=145) of respondents were identified to have poor knowledge, as shown in Figure 3.1.

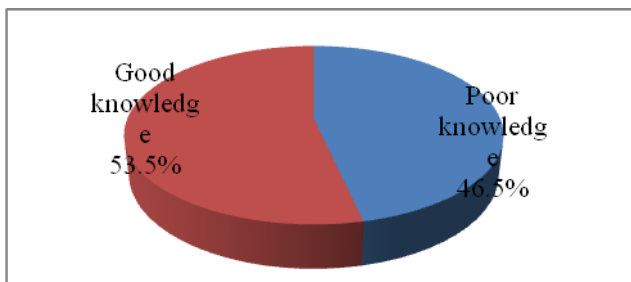


Figure 3.1: Level of Knowledge about Organ Donation

Moreover, there was a high level of awareness regarding organs that have been successfully transplanted which listed accordingly thus far, the kidney was the most known among the respondents, with 95.2% of respondents reporting to have heard about it. Then the heart (63.8%, n=199) and liver (58.3%, n=182) were the second and third place for the organ that has been successfully transplanted. This was followed by cornea transplantation, skin which was known by 145(46.5%) and 121(38.8%) of the respondents. Conversely, the lungs, valve of the heart, and bone were among the least reported by respondents with only 72(23.1%), 71(22.8%) and 54(17.3%) respectively.

3.3 Attitude Towards Organ Donation

Overall, 169(54.2%) of respondents had a negative attitude towards organ donation, and 143(45.8%) of respondents had a positive attitude towards organ donation. Figure 3.4 above presented the total number of students (n) and percentage (%) with the frequency regarding the responses of participants to questions on attitudes toward organ donation.

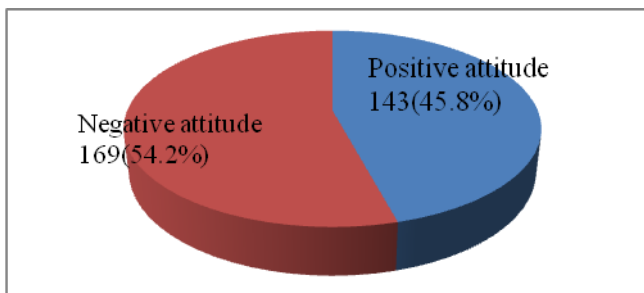


Figure 3.4: Level of attitude about organ donation

Most of the participants disagree (87.8%, n=274) that organ donation is against their religion. Likewise, more than half of the respondents (72.8%, n=227) disagree that the body will be mutilated and disfigured by donating an organ and disagree (79.8%, n=249) that there will no any efforts done by the physicians to save a life if they know that the person is a potential donor. Besides, 146 (46.8%) of respondents disagree that organ donation may delay the funeral rites, and 139(44.6%) of respondents disagree that their family members would not support organ donation. Moreover, nearly half of the respondents (50%, n=156) did not feel that they can only donate their organs to the relative or someone that they know.

Of the participants, only (14.1%, n=44) were agree to donate their organs when they still alive while (47.8%, n=149) of participants were undecided and 119(39.1%) of participants were refused to donate their organs when they alive. Next, most as much as (90.7%, n=283) of respondents believed that a person willing to donate their organ is a hero. Analyzing the participants' regarding their belief toward donating the organ would enable the part of the donor remains alive after death, where slightly half of the respondents (53.2%, n=166) had that believer.

Approximately a significant majority (89.1%, n=278) of participants strongly agree or agree that donating an organ would enable the donor to help someone who is suffering and similarly 222(71.2%) of the respondents feel that incentives should be provided to all organ donors.

3.4 Behaviour Towards Organ Donation

Figure 3.5 shows the behavior of subjects toward organ donation among Health Sciences Students in UiTM Puncak Alam. The participants' behavior toward organ donation measured by the use of a scale containing four items.

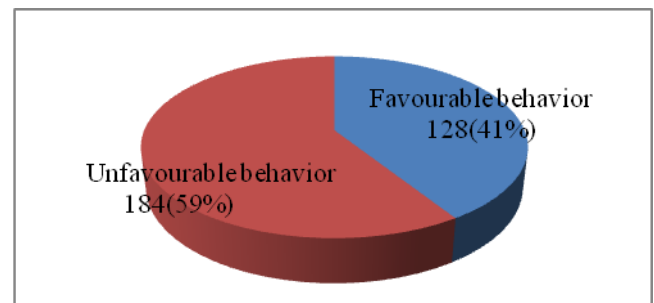


Figure 3.5: Level of behavior toward organ donation

The overall behavior score was computed by combining all the behavior scores, and an average (median) score was then obtained. Participants scores ranged from 1.0 to 5.0, with a median score of 14 (standard _ 2.336). Participants' behavior was classified as either "favorable behavior" or "unfavorable behavior". Those whose median behavior scores fell below the 60th percentile (<15) were considered to have unfavorable behavior, whereas those with a score above the 60th percentile (≥15) were regarded as having favorable behavior toward organ donation. Generally, less than half of the respondents (41%, n=128) had favorable behavior. While more than half of the respondents (59%, n=184) had unfavorable behavior.

Furthermore, half of the participants (51.9%, n=162) were undecided to pledge as an organ donor in Malaysia, and 136 of respondents (43.6%) agreed to pledge themselves as an organ donor in Malaysia. Besides, about (67.3%, n=210) of respondents were willing to receive a transplant if necessary. Furthermore, only (33.3%, n=104) of respondents feel that every individual should automatically be registered as an organ donor and more than half of participants (53.9%, n=168) were agree that to consider donating the organs of a deceased family member or loved one.

3.5 Correlation between knowledge, attitudes, and behavior

Table 3.4
Relationship Between Participants' Knowledge, Attitudes, and Behavior

	Knowledge About Organ Donation	Attitudes Toward Organ Donation	Behavior Toward Organ Donation
Knowledge About Organ Donation	1.000	-.033	-0.72
Attitudes Toward Organ Donation	-.033	1.000	.266**
Behavior Toward Organ Donation	-.072	.266**	1.000

** Correlation is significant at the .01 level (2-tailed).

The Spearman ρ correlation test was conducted to identify the relationship between the outcomes (knowledge, attitudes, and behavior); the results presented in Table 3.4. As shown in Table 3.4, there was no significant correlation found between the knowledge regarding organ donation and either attitudes or behavior toward organ donation. In contrast, a statistically significant correlation was observed between attitudes toward organ donation with behavior regarding organ donation ($\rho = 0.266, p = .000$). This revealed that there were significantly positive correlated between the attitudes toward organ donation with behavior toward organ donation, which indicated that as the values of attitudes increase, the values of behavior toward organ donation also increase. Besides, this implicit that having a good knowledge regarding organ donation does not interpret in having positive attitudes or favorable behavior toward organ donation. However, persons with positive attitudes showed corresponding with favorable behavior.

4. DISCUSSION

4.1 Knowledge about Organ Donation

The researcher agreed that the knowledge level of the students is satisfying. However, further program education is needed to improve knowledge among the public and also

future healthcare worker who is students. This can be supported by a suggestion to educate medical practitioners on Malaysia's existing regulatory framework and providing these practitioners with adequate patient counseling techniques to assuaging the fear of organ donation and encouraging people to donate [20]. Educating health-care professionals regarding the organ donation process appears to be a vital factor to maximize the benefits from the limited organ donor pool [12].

4.2 Attitude and Behaviour toward Organ Donation

It is revealed that more than half of health sciences students had a negative attitude toward organ donation while less than half of the respondent had a positive attitude toward organ donation. In another study conducted in Malaysia, a result of the study showed that a moderate attitude toward organ donation is found among medical and nursing students [22]. On the other hand, based on this research study, it is revealed that only less than half of health sciences students of UiTM Puncak Alam had a favorable behavior toward organ donation. This finding can be supported by the previous study that had been conducted. In 2017, a study conducted among Nigerian students of the University of Bedfordshire. The results showed that only half of the study participants had favorable behavior towards organ donation [23].

Based on the study, it was revealed that students especially had a positive attitude and favorable behavior toward organ donation. However, it was found that more health science students in UiTM Puncak Alam had a negative attitude and unfavorable behavior toward organ donation. The difference in this recent study may be due to further studies that are suggested to be carried out to investigate the factor that influences the students on the unfavorable behavior toward organ donation.

4.3 Correlation on knowledge, attitudes, and behavior toward organ donation

This research found that there was no significant correlation found between the knowledge regarding organ donation and either attitudes or behavior toward organ donation. This result was similar to a research finding of a study conducted among Nigerian students University of Bedfordshire of United Kingdom (UK). From the study, it is stated that having higher knowledge about organ donation does not correlate with having either positive attitudes or favorable behavior toward donation [23]. On another hand, the result of the study showed that there was a significantly positive correlation between attitude toward organ donation with behavior toward organ donation. Similarly, in a study

conducted in the UK (United Kingdom), it was agreed that positive attitudes toward donation correlate to having favorable behavior toward it [23].

To sum up, the researcher agreed that the level of knowledge alone might be not determining the cause for a person's attitude and behavior on organ donation. Having a good level of knowledge may not be a significant factor that contributes to a good attitude and favorable behavior toward organ donation.

5. CONCLUSION

Overall, findings indicate that although most of the respondents showing a good knowledge regarding organ donation, however, it does not imply for them to have a positive attitude and favorable behavior toward organ donation. This can be considered concerning issues since most of the respondents will be a health care professional later in the future. Besides, although there is a positive correlation between attitudes and behavior toward organ donation, however percentages of positive attitudes and favorable behavior still considered lower. Therefore, new rules can be done by the government to make this successful such as more profound knowledge regarding organ donation and transplantation can be one of the mandatory subjects that must be taken by the college students, where organ donation should be taught as a key topic.

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