



## **LEVEL OF KNOWLEDGE, BELIEF AND ALTRUISM TOWARDS ORGAN DONATION AMONG FINAL YEAR STUDENTS IN THE FACULTY OF MEDICINE AT UNIVERSITY KEBANGSAAN MALAYSIA, KUALA LUMPUR, MALAYSIA**

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### **ABSTRACT**

*Higher medical technological development and better awareness has affected the public's perception on organ donation positively. One of the strategic plans by the Ministry of Health is to target the younger generation to achieve long-term changes in this issue through a variety of appropriate channels. This study aimed to assess the level of knowledge, belief and altruism towards organ donation among final year students from the Faculty of Medicine in University Kebangsaan Malaysia, Kuala Lumpur. Questionnaires were distributed to 190 respondents from two programs involving 173 (91.1%) medical students and 17 (8.9%) nursing students via systematic random sampling. The Cronbach's alpha coefficient value for belief was 0.626 and 0.853 for altruism. This study showed that level knowledge of students with mean score of 60.92 (S.P ± 8.79) was at a moderate level for 109 (57.4%), 80 students (42.1%) at a high level and one for (0.5%) at low level. The overall students level of belief with the mean score of 27.00 (± 4.93 S.P) was positive with 110 (57.9%) while 80 students (42.1%) with negative belief. The altruistic level with mean score 35.46 (S.P ± 10.76) of 146 students (76.8%) at a moderate level, 41 students (21.6%) at high level and only 3 (1.6%) at low level. In correlation analysis, there are relationship between level of knowledge towards altruistic and knowledge towards beliefs ( $p < 0.05$ ). However, there is no significant relationship between knowledge with beliefs because of the value of  $p > 0.05$ . In conclusion, the level of knowledge should be further enhanced among medical and nursing students with the hope that increased knowledge will positively influence the belief system and the altruistic behaviour of respondents regarding the concept of organ donation.*

**KEYWORDS:** Knowledge; Belief; Altruism; Organ Donation; Medical; Nursing.

## INTRODUCTION

The *World Health Organization* (2009) has defined organ donation as the transfer of cells, tissue or organs of human origin from the donor to the recipient with the aim of returning important bodily functions.

Organ donation is not presumed to be taboo anymore with the developments in medical technology. The rise in awareness about this issue is in line with the development that affords many people a chance to live a better life. In Malaysia, the National Transplant Resource Centre is the organization specially formed by the Ministry of Health Malaysia with the cooperation of the Medical Development Section to disseminate accurate information, promote as well as enhance the awareness among society about organ donation. Numerous promotional activities have been initiated to provide information and guidance to society about organ donation through various channels, among them is the printed media, electronic media and the new media. Besides that, rapid progress and innovations in the social media is another method that helps to change healthy behavior (Korda & Itani 2013).

Although the need is increasing, the organ donation rate is still low and differs according to the views and acceptance of each country (Makmor et al., 2015). According to a report by the National Transplant Resource Centre (PSTN 2016), since the pledge card was introduced in 1998 and until December 2016, 406,200 Malaysians have pledged to become organ donors after their death. This represents 1.1 percent of the Malaysian population. Thus, if it is according to the racial proportion, 161,643 (39.8%) were Chinese, 92,476 (22.8%) were Indians, whereas 126,018 (31.0%) were Malays and 26,063 (6.4%) represented other races. The number of pledges had increased yearly and in 2015, recorded the highest increase of 51,577 individuals since the organ donation promotion program was enhanced and widened in 2006.

The demand for organ transfers is increasing in Malaysia; hence, most of it is from patients with end-stage kidney failure dependent on dialysis. According to the 22<sup>nd</sup> Report of the Malaysian Dialysis and Transplant Registry 2014, there are 7,055 new patients each year who needed dialysis treatment compared to 35,000 dialysis patients around the country. Half of them need kidney transplants compared to 5,491 in 2013. This leads to health, social and economic burdens faced by the country because less than 100 kidney transplants have been undertaken in Malaysia thus far.

The WHO (2010) report stated that the organ donation rate in Malaysia was 0.9 percent or one per million of the population compared to the number of hemodialysis patients that has increased almost 3-fold from 7,837 in 2001 to 21,703 in 2010. This situation

has caused a short of supply of organs in the country compared to the demand by patients waiting for donated organs. According to the National Health and Morbidity Survey by the Institute of General Health (2015), there is an increase in prevalent excess of body weight and obesity among Malaysians. The prevalent excess body weight had increased by 30% and obesity by 17.7% compared to the National Health and Morbidity Survey by the Institute of General Health (2011), which showed a prevalent excess body weight of 29.4% and obesity of 15.1%. These increases exposes individuals to organ failures that would need organ transplants in the future.

In order to increase the awareness of organ donation among officers and health care workers, the Health Ministry Malaysia (KKM) has outlined drastic steps by creating the *Let's Pledge KKM!* This is important not only to increase the number of pledgers among officers and health care workers but to become agents of society to disseminate information about the importance of organ donations. According to Zainurulazwa (2013), the level of awareness among officers and health care workers about organ donation was still low although they had good knowledge about the subject. In relation to this, Wong (2011) and Edwards et al., (2005) were of the view that early exposure to organ donation is able to increase the knowledge and level of awareness about organ donations.

Besides that, the role played by medical practitioners, especially doctors and nurses dealing with the organ donation process, need to be given priority because early exposure to organ donation depends on knowledge, beliefs and fear (Tobias et al., 2016). The readiness to act as an organ donor is related to pre-existing knowledge, trust, fear as well as the role affected by the exposure to the required knowledge that would help encourage the acceptance of organ donation. According to a report by the National Transplant Resource Centre (2016), youth from the age of 21 and 30 years are easily approachable and have become the highest number of pledgers thus far.

## SAMPLE AND INSTRUMENT OF THE STUDY

This study was carried out on 190 final year students from the Faculty of Medicine in Universiti Kebangsaan Malaysia located in the District of Cheras in Kuala Lumpur. Out of the 16 states in Malaysia, the Federal Territory of Kuala Lumpur is placed 5<sup>th</sup> in the number of organ donation pledges with 38,445 (9.5%). Hence, selecting any one location in WP Kuala Lumpur would be relevant because that state has the potential to increase the number of organ donation pledgers.

The study sample was taken from the course name list of the Faculty of Medicine in Universiti Kebangsaan Malaysia, Kuala Lumpur. It was divided

into 2 programs, namely the Bachelor's Degree in Medicine and the Bachelor's Degree in Nursing. Overall, the researcher chose final year students from the Faculty of Medicine because the nursing and medical profession makes up the main posts and most number of staff in a health institution. According to Milka et al., (2016), the nursing students were chosen because of their future involvement in organ transfer and donations. According to the researcher, final year students have a more matured view and standpoint besides being fully prepared to carry out duties and responsibilities. According to Neils et al., (2016), doctors and nurses play an important role in issues involving organ transplants.

The sampling method used was the *Systematic Random Sampling* method, whereby the respondents were randomly selected based on certain intervals or multiples. The questionnaire was adapted from several previous studies and translated into Malay using the *back-to-back translation* technique and modified to suit the Malaysian society. It was intended to collect data pertaining to knowledge, beliefs and altruism about organ donations among final year students from the Faculty of Medicine in Universiti Kebangsaan Malaysia.

There were 2 questionnaires used in this study, namely the *Australian Organ Donor Register Brochure* produced by Horton & Horton (1990) and Melissa & Katherine (2007) that contained questions on knowledge and beliefs about organ donation. Whereas, for the altruistic level, the *Self-Report Altruism Scale (SRAS)* (Borrong 2006 & Rushton et al., 1981) was used.

Score	Number	Percentage
Low	1	0.5
Moderate	109	57.4
High	80	42.1

This study also found that the level of knowledge regarding organ donation of a majority of final year students under the Faculty of Medicine, UKM was moderate. This study was in line with Kobus (2016) in relation to the level of knowledge of medical students in two universities, namely *Medical University of Bialystok (MU)* and *Bialystok University of Technology (UT)* in Poland, which also found a moderate level of knowledge. The level of knowledge and acceptance differed and depended on the understanding that a medical student has better basic knowledge about organ donation.

Gidimisa (2016) also found that nursing students in Mthatha College in South Africa had a moderate level of knowledge and the role of a nurse as a health care supervisor is very important when dealing with society regarding the topic of organ donation. In issues involving organ donation, it is

## FINDINGS AND DISCUSSIONS

### *Socio-Demographic Characteristic*

The total respondents involved in this study were 190 students from the Faculty of Medicine in Universiti Kebangsaan Malaysia who were pursuing the Bachelor of Medicine Degree (91.1%) and Bachelor of Nursing Degree (8.9%). The study found that the respondents were mainly Malays (74.7%), followed by Chinbese (18.9%), Indians (5.8%) and others (such as the Dusun - 0.5%). The respondents according to the religious component comprised Muslims (74.7%), Buddhist (13.7%), Hindu (5.3%), Christians (5.8%) and Atheist (0.5%).

The highest number of respondents were women (140 or 73.7%) compared to men (50 or 26.3%). The age range was between 23 to a maximum of 28 years. The analysis showed that the age difference was between 22 and 29 years, with a min of 23.4 and a standard deviation of 0.87 for this study.

Since the focus of the study was final year students from the two programs mentioned earlier, the largest number (173 students or 91.9%) were from other years of study and most of them were in semester 9 and 10 of the Bachelor's degree program. Whereas, the least number (17 students or 8.9%), were from semester 7 of the Bachelor's degree program.

### *Level of Knowledge*

This study found that 109 (57.4%) respondents had moderate level of knowledge regarding organ donation, followed by 80 respondents (42.1%) had a high level of knowledge and 1 respondent (0.5%) had a low level of knowledge.

necessary for nursing administrators and public health authorities to develop an understanding about the importance of health in regards to organ donation as well as initiate more programs at the university level for university students on the same topic (Hebsiba & Kanumilli 2015).

Studies have shown that knowledge is an element that could easily change the target group. Hence, a high level of knowledge could help avoid the misconception by some in the target group about organ donation. According to Flayou et al., (2016), organ donation is a unique process and involves several parties, including medical staff, who not only influence but also enhance people's knowledge regarding the issue of organ donation.

In this study, knowledge about brain dead, knowing that there are no extra charges for donating organs as well as burials will be given to donors in

order to correct their misconceptions and enhance the respondent's knowledge. According to general understanding, it is a normal issue in medical procedures and needs to be highly exposed. There is a lack of knowledge about the legislative criteria and details of the organ donation process that directly causes a decline in positive attitudes among medical students (Hosam et al., 2016).

According to Trevor et al., (2003), limited knowledge about organ donation could be due to the lack of organ donation courses in the Bachelor of Medicine degree curriculum. According to Vanessa et al., (2013), the lack of education and basic training about organ donation is one of the main factors why student doctors and nurses are not comfortable with organ donation. According to Passi et al., (2010), the level of professionalism is closely related to the access and quality of health care.

Nevertheless, in this study, the knowledge variable did not play a role or show any significant relations among the socio-demographic characteristics, such as gender, study program, ethnicity or religion towards organ donation. Hence, it could be said that a high, moderate or low level of knowledge does not indicate any clear difference regarding organ donation among medical or nursing students. However, medical or health science students who would become health care professionals should possess a high level of knowledge so that they could deliver a clear message

when helping others to make a standpoint on organ donation. The implementation and effectiveness of the current curriculum should be discussed with the proper authorities so that the suitability of the organ donation issue in the health science field could be evaluated (Emmanouil et al 2014).

Moreover, it is suggested that a module or course on organ donation is designed by taking into consideration the suitability of organs that could be donated after death. This is because the current method is more towards registering the wish to donate one's organs; while legislation on organ donation and the 'brain dead' concept are generally drastic steps to increase the student's knowledge about organ donation (Donal & Barbara 2013).

### **Level of Beliefs**

In reference to the respondent's level of belief about organ donation, 110 (57.9%) respondents had positive beliefs, while 80 (42.1%) respondents had negative beliefs about organ donation. The overall score for level of belief is shown in Table 4.13. The conceptual design of the study for the belief construct included behavior and belief controls. Behavioral beliefs refer to actions that are highlighted and influenced by several criteria such as relative advantage, testability and visibility. Whereas, belief control refers to the level of learning that is influenced by the same criteria, which is relative advantage, testability and visibility.

Score	Beliefs	
	Number	Percentage
Positive	110	57.9
Negative	80	42.1

The majority of respondents in this study answered 'not certain' when asked whether organ donation could improve the lives of others. Although medical and nursing students are not exposed to matters pertaining to organ donation, their belief about organ donation was still high. This is because their role as future doctors and nurses would be to encourage discussions on organ donation to families of patients who have the potential to donate organs. Besides that, personal or moral conflicts from the belief aspect could be a reason not to believe the advantages of organ donation (Teresa et al. 2007).

Numerous factors were found to influence medical and nursing students about organ donation. One of these factors is the individual's belief about the issue of organ donation. This study has shown that students from both these fields of study believe that organ donation avoids the wastage of organs and tissues that are otherwise healthy as well as procedures involved in organ donation that are efficient in helping expedite organ donation. According to Marlene et al., (1991), personal beliefs about organ donation are

positive when organ donation is seen as a way to save lives.

Belief is the core to issues regarding organ donation (Hongxia et al., 2015). Although organ donation is a wonderful idea in contemporary medicine; hence, belief in the inherited culture from our forefathers as well as the peer factor influences students to be confident about organ donation. This study has also shown that medical and nursing students agree to adhere to the principles of religion.

In the test on the belief variable with the ethnic characteristic, there were significant differences in the ethnic characteristic, such as the beliefs of Indians compared to that of the Malays. This shows that Indians accept organ donation due to declining health. Sandip (2016) and Boporai et al., (2011) found that Indians from Asia were inclined to have a higher rate of diabetes and obesity compared to other Asian groups and this puts them at a higher probability for future organ transplants.

This study shows that final year students from the Faculty of Medicine program had a positive level



of belief towards organ donation. This positive level indicates that the youth, especially medical and nursing students, are able to enhance their understanding of organ donation and at the same time increase their level of belief to a more positive one. According to Nowak et al., (2014), introduction to issues related to transplants in schools could produce a positive impact on organ donation and reject the belief that confuses this issue in the media. Besides enhancing knowledge and a more positive belief, it also encourages the younger generation to explore the benefits of organ donation.

According to Vijayalakshmani et al., (2016), although students exhibit positive beliefs about organ donation, it is insufficient to enhance the knowledge of nursing students regarding organ donation; thus, a revision of the nursing curriculum is needed to prepare competent nurses to face issues related to organ donation besides fostering a high awareness about organ donation in the future. According to Kobus et al., (2016), medical students coming from universities that

have an influence among institutions of higher learning can influence other students to become organ donors.

### **Level of Altruism**

According to the altruistic level in this study, it shows that the altruistic inclination of a person comprises the empathy components, which is the ability to feel, understand and care for the feelings of others and this is the highest level in the classification of altruism. Next, the volunteerism component was at a moderate level, whereby there was no desire to obtain feedback but solely implement it for the sake of others even if by doing so one sacrifices the honest and fair values in oneself. Then, the weak level in a component only aids others in the form of materials and time. This study found that the respondents (146 respondents or 76.8%) had a moderate altruistic level towards organ donation, followed by 41 respondents (21.6%) with a high altruistic level and 3 respondents (1.6%) with a low altruistic level.

<b>Score</b>	<b>Altruism</b>	
	<b>Number</b>	<b>Percentage</b>
Low (provide assistance)	3	1.6
Moderate (Volunteer)	146	76.8
High (Empathy)	41	21.6

Altruistic behavior refers to actions related to rendering help that exists not due to coercion or a duty to do so but rather that action is voluntary in nature and not based on certain norms that could negatively affect the individual. These actions need sacrifice taking into consideration the time spent, effort and non-rewarding aspects. Altruism can be defined as voluntary actions initiated without expecting anything in return except the satisfactory feeling from doing a good deed (Borrong 2006).

Altruistic behavior and organ donation are interrelated because the meaning of altruism is giving assistance to others and not being selfish when helping others. The act of helping is synonymous with the main task of prospective medical and nursing students in the aspect of health. Doctors and nurses are seen as individuals who guide, strive as well as influence society on issues of health such as organ donation (Hobeika et al. 2009).

In this study, three components of the question were answered with a high percentage so as not to ever help others in whatever ill-fated situation that might cause the altruistic factor to become moderate. It could also indicate that help would be given to those who are known or are close to the respondent. According to Aviva (2016), as they would be working in the health sector, considering the ethical issues in organ donation

would help to explain organ donation as a voluntary act that has the potential to enhance human moral values.

Past studies have shown that not all altruistic behavior influences medical students in their readiness to face this issue. Hence, the level of altruism of final year students from the Faculty of Medicine in UKM did not show a relationship with the characteristics of the study program, although the medical students had a higher value of altruism compared to nursing students. According to Praveena et al., (2016), emphasis via the development of the medical education curriculum could offer some benefits to medical students in maintaining their current level of altruism.

In this study, the altruistic variable did not show any significant relationship with the study program although the altruistic level of the medical students was higher than the nursing students. Nurit et al., (2016) had used the altruistic concept in organ donation as a way to influence social behavior. The social behavior here refers to forming relations with attitude, desire and human behavior in which the behaviour is not only formed by the attitude but also subjective norms such as the self-confidence regarding what is asked of us by others (Yayat 2009). The context of this study refers to the medical profession that needs individuals who are confident about organ donation issues and the society is confident of what we are saying or doing. Doctors are seen as trustworthy

and they can influence society regarding organ donation issues compared to nurses (Hobeika et al. 2009).

This study shows that the final year students under the Faculty of Medicine program have a moderate level of altruism. The findings show that a level of altruism needs to be present in each behavior component of medical and nursing students because the nursing and medical profession is related to altruistic behavior. According to Matthew and Peter (2016), altruistic behavior in medical students depends on an active social context that encourages a culture of giving. The social context here refers to the overall role played by the medical student to influence others, especially pertaining to the organ donation issue. According to Neils et al., (2016) the role of doctors and nurses is important in issues involving organ transplants.

**Relationship between levels of knowledge, belief and altruism.**

The statistical tests were carried out to examine the relations between the levels of knowledge, belief and altruism and organ donation. It functions to examine relationships such as a few found in this study, for example, the higher the level of knowledge, the higher the level of altruism of the individual about organ donation. The second finding states that higher the level of knowledge, the lower the level of belief towards organ donation, whereas the third finding states that the higher the level of belief, the lower the level of altruism.

The level of knowledge has positive relations with the level of altruism, whereby higher the level of knowledge, the higher the level of altruism.

	Level of Altruism	
	r	p Value
Level of Knowledge	0.144	0.047*

*\*p < 0.05 – significant*

The level of knowledge has an inverse relationship with the level of belief, whereby the

higher the level of knowledge the lower the level of belief.

	Level of Belief	
	r	p Value
Level of Knowledge	-0.11	0.129

*\*p < 0.05 – significant*

The level of belief has an inverse relationship with the level of altruism, whereby higher the level of belief, the lower the level of altruism

	Level of Belief	
	r	p Value
Level of Knowledge	-0.252	0.000*

*\*p < 0.05 – significant*

Knowledge is a fact found in a statement that is already known and is being studied and as well as a continuous form for an individual who is experiencing new meaning each time. Knowledge about organ donation becomes the basis for forming healthy lifestyle practices among society by creating awareness among society about the importance of optimum level health as well as exposure to activities that lead to organ failures (KKM 2011).

According to Siti Zubaidah Ismail (1998), technological progress in the field of bio-medicine has witnessed various astonishing products, not only in the field of medicine but also in the overall world of knowledge. A high level of knowledge about organ donation helps to enhance the level of altruism in an individual. Yuwanto (2012) stated that the level of knowledge is capable of forming a high level of altruism in an individual. Current changes in the way

information about organ donation is distributed could enhance society’s knowledge about organ donation.

Misunderstandings about the organ donation process, such as distrust in the medical system and uncertainties about religious teachings is seen as negatively influencing an individual’s attitude and at the same time portraying a low level of knowledge. According to Arriola et al., (2011) and Alvora et al., (2010), focus on encouraging the masses to register as organ donation pledgers is influenced by knowledge, beliefs and the intention to overcome the obstacles in the registration process.

When making suggestions regarding organ donation promotions, the focus should be on enhancing the level of knowledge about organ donation because a negative attitude could be a factor in the decline of altruism (Mary 2016). An increase in the rate of registration will ensure a steady supply of organs and the altruistic nature depicts high moral values as well

as a high level of knowledge that convinces them to make the correct decision regarding organ donation.

Altruism is a social process or social work that warrants sacrifice for others without thinking about self-importance. According to Pavlos and Konstantinos (2016), when considering volunteerism and behavioural factors, two general types of altruism have been exposed, namely reciprocity and truth. Reciprocity is one of several motives to join volunteerism activities. In the context of organ donation, the act of making a pledge is a form of volunteerism and altruism comes naturally if beliefs are high.

According to Narayani et al., (2016), Australia has enhanced the awareness on organ donation by offering financial rewards as one way to encounter unemployment problems. Hence, this is not practical in Malaysia because organ donation is something that is done voluntarily and sincerely (Norzeila & Hanafiah 2011). Besides that, the researcher suggested that more educational programs about organ donation should be implemented for the target group. Karki et al., (2015) also suggested that educational activities not only enhance knowledge but also awareness about organ donation among students.

## CONCLUSION

This study intended to understand in detail the factors that influenced behaviour as well as actions of organ donation pledgers. This study found that the level of knowledge of student doctors and nurses was moderate. Besides that, it was evident that positive beliefs have a good impact in efforts to assimilate the advantages of organ donation in the context of health and medicine. In addition, the altruistic behavior component showed a positive but weak relationship but slightly influenced the individual's decision to pledge organ donation.

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