



Faculty of Medicine and Health Sciences

**KNOWLEDGE, ATTITUDE AND PRACTICE
TOWARDS ORGAN DONATION AMONG
NURSING UNDERGRADUATE STUDENTS FMHS UNIMAS**

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70108

Bachelor of Nursing with Honours

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**KNOWLEDGE, ATTITUDE AND PRACTICE
TOWARDS ORGAN DONATION AMONG
NURSING UNDERGRADUATE STUDENTS FMHS UNIMAS**

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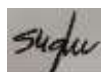
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Abstract

Background: The majority of patients on the organ transplant list died while waiting and hoping to get a new organ. Thus, organ donation was necessary to reduce the gap between the patients who need transplantation and the availability of eligible donors.

Aim: To assess the level of knowledge, attitude and practice towards organ donation among nursing undergraduate students from FMHS UNIMAS.

Methodology: Descriptive cross-sectional quantitative study was conducted among 132 randomly selected nursing undergraduate students from FMHS UNIMAS. A semi-structured questionnaire comprised of four sections (socio-demographics data, knowledge, attitude and practice) was used to collect data. The data was entered and analysed using IBM SPSS Statistic 26.0 version.

Results: 18.9% of nursing students had good knowledge, 29.5% of nursing students had fair knowledge, and 51.5% of nursing students had poor knowledge towards organ donation. The nursing students had equal distribution level of attitude as 50% of them had either negative or positive attitude towards organ donation. 68.9% of nursing students had bad practice, while 31.1% of nursing students had good practice towards organ donation. There was no statistically significant relationship between knowledge and attitude ($r=.037$, $p=.672$) or knowledge and practice ($r=-.013$, $p=.735$), but there was a statistically significant relationship between attitude and practice towards organ donation ($r=.396$, $p=.000$).

Conclusion: Overall, the nursing undergraduate students from FMHS UNIMAS were found to have poor knowledge, equal distribution level of attitude either negative or positive and bad practice habits towards organ donation. Therefore, necessary

educational interventions were needed to consolidate their knowledge, attitude and practice towards organ donation.

Keywords: Knowledge, Attitude, Practice, Organ donation, Nursing undergraduate students

Abstrak

Latar belakang: Majoriti pesakit dalam senarai pemindahan organ mati ketika menunggu dan berharap dapat mendapatkan organ baru. Oleh itu, pendermaan organ diperlukan untuk mengurangkan jurang antara pesakit yang memerlukan pemindahan dan ketersediaan penderma yang layak.

Matlamat: Untuk menilai tahap pengetahuan, sikap dan amalan terhadap pendermaan organ di kalangan pelajar sarjana kejururawatan dari FMHS UNIMAS.

Metodologi: Kajian kuantitatif keratan rentas deskriptif dilakukan di antara 132 pelajar sarjana kejururawatan terpilih secara rawak dari FMHS UNIMAS. Soal selidik separa berstruktur yang terdiri daripada empat bahagian (data sosio-demografi, pengetahuan, sikap dan amalan) digunakan untuk mengumpulkan data. Data dimasukkan dan dianalisis menggunakan versi IBM SPSS Statistic 26.0.

Hasil: 18.9% pelajar kejururawatan mempunyai pengetahuan yang baik, 29.5% pelajar kejururawatan mempunyai pengetahuan yang adil, dan 51.5% pelajar kejururawatan mempunyai pengetahuan yang lemah mengenai pendermaan organ. Pelajar kejururawatan mempunyai tahap pengagihan yang sama kerana 50% daripadanya mempunyai sikap negatif atau positif terhadap pendermaan organ. 68.9% pelajar kejururawatan mempunyai amalan buruk, sementara 31.1% pelajar kejururawatan mempunyai amalan yang baik terhadap pendermaan organ. Tidak ada hubungan yang signifikan secara statistik antara pengetahuan dan sikap ($r=.037$, $p=.672$) atau pengetahuan dan praktik ($r=-.013$, $p=.735$), tetapi terdapat hubungan yang signifikan secara statistik antara sikap dan amalan terhadap pendermaan organ ($r=.396$, $p=.000$).

Kesimpulan: Secara keseluruhan, pelajar sarjana kejururawatan dari FMHS UNIMAS didapati mempunyai pengetahuan yang lemah, tahap sikap yang sama baik negatif atau positif dan amalan buruk terhadap pendermaan organ. Oleh itu, campur tangan pendidikan yang diperlukan diperlukan untuk menggabungkan pengetahuan, sikap dan amalan mereka terhadap pendermaan organ.

Kata kunci: Pengetahuan, Sikap, Amalan, Derma organ, Pelajar sarjana kejururawatan

Table of Contents

Title Page	i
Declaration of Original Work	ii
Acknowledgement	iv
Abstract	v
List of Tables	xii
List of Figures	xiii
Chapter 1: Introduction	1
1.0 Introduction	1
1.1 Background of study	1
1.2 Problem statement	3
1.3 Research questions	5
1.4 Research aim and objectives	6
1.5 Conceptual framework	7
1.6 Significance of study	8
1.7 Definition of terms	10
1.8 Summary	11
Chapter 2: Literature Review	12
2.0 Introduction	12
2.1 Knowledge towards organ donation	12
2.2 Attitude towards organ donation	15
2.3 Practice towards organ donation	17
2.4 Relationship between variables	18

2.5	Theoretical framework	19
2.6	Summary	21
	Chapter 3: Methodology	22
3.0	Introduction	22
3.1	Research design	22
3.2	Research setting	22
3.3	Population	23
3.4	Inclusion and exclusion criteria	23
3.5	Sampling method and sampling size	24
3.6	Study instrument	26
3.7	Ethical consideration	28
3.8	Data collection procedures	29
	3.8.1 Pilot study	29
	3.8.2 Actual study	32
3.9	Data analysis method	34
3.10	Summary	35
	Chapter 4: Results	36
4.0	Introduction	36
4.1	Socio-demographic data	36
4.2	Knowledge towards organ donation	38
4.3	Attitude towards organ donation	43
4.4	Practice towards organ donation	48
4.5	Relationship between variables	52
4.6	Summary	54
	Chapter 5: Discussion and Conclusion	55

5.0	Introduction	55
5.1	Knowledge towards organ donation	55
5.2	Attitude towards organ donation	58
5.3	Practice towards organ donation	61
5.4	Relationship between variables	63
5.4.1	Relationship between knowledge and attitude	63
5.4.2	Relationship between knowledge and practice	64
5.4.3	Relationship between attitude and practice	65
5.5	Summary of findings	66
5.6	Implications of study	67
5.7	Recommendation	68
5.8	Limitations of study	69
5.9	Conclusions	70
	References	71
	Appendix	78
A.	Research approval letter	78
B.	Participant's informed consent form	79
C.	Permission to use questionnaire	81
D.	Data collection instrument	85
E.	Gantt chart	89
F.	Budget planning	89

List of Tables

Tables	Page	
Table 3.8.1	Reliability in Rasch analysis (Sumintono & Widhiarso, 2014)	30
Table 4.1	Socio-demographic data	37
Table 4.2a	Frequency and percentage distribution for knowledge towards organ donation	40
Table 4.2b	Frequency and percentage distribution for level of knowledge towards organ donation	42
Table 4.3a	Frequency and percentage distribution for attitude towards organ donation	46
Table 4.3b	Frequency and percentage distribution for level of attitude towards organ donation	48
Table 4.4a	Frequency and percentage distribution for practice towards organ donation	50
Table 4.4b	Frequency and percentage distribution for level of practice towards organ donation	51
Table 4.5	Correlation between knowledge, attitude and practice towards organ donation	5.3

List of figures

Figures	Page
Figure 1.5 Organ donation conceptual framework	8
Figure 2.5 The theories of reasoned action and planned behavior (Ajzen and Fishbein, 2005)	20
Figure 3.8 Flow chart for data collection procedure	33
Figure 4.2 Normality distribution for total score of knowledge towards organ donation	38
Figure 4.3 Normality distribution for total score of attitude towards organ donation	43
Figure 4.4 Normality distribution for total score of practice towards organ donation	49

CHAPTER 1

Introduction

1.0 Introduction

This research study is about “Knowledge, Attitude and Practice Towards Organ Donation Among Nursing Undergraduate Students FMHS UNIMAS”. For chapter 1, it includes background of the study, problem statement, research questions, research aims and objectives, conceptual framework, significance of the study, definition of terms and summary.

1.1 Background of the study

The high demand and limited organ supply seemed to be the major hurdle in organ transplantation. This could lead to thousands of deaths worldwide as the statistics from Our World in Data displayed that a large proportion of people died from chronic diseases such as heart diseases, cancer, diabetes, respiratory diseases and so forth (Ritchie et al., 2019). It could be found to be associated with multiple organ failure. People did not know that organ transplantation was the only treatment for patients suffering from end stage organ failure. According to Haron (2022), there were still over 10455 patients on the organ transplant waiting list. However, the sad truth was, the majority of patients on the organ transplant list died while waiting and hoping to get a new organ. This might be due to the insufficient number of donors who pledged their organs and it represented a great need for more organ donors to step forward to pledge their organs.

According to Haron (2022), there had been a total of 2641 solid organ transplants performed in Malaysia since 1997 to April 2022 with 2403 kidney

transplants, 198 liver transplants and 40 cardiothoracic transplants during the past 25 years. This statistic had shown that most patients were being diagnosed with chronic kidney disease requiring dialysis in Malaysia. This kidney disease was a global health crisis which was caused by among others diabetes and hypertension. According to Daim (2022), the Health Minister Khairy Jamaluddin claimed that 16% of the world population or 2.6 million patients needed dialysis in order to sustain their life. Thus, kidney transplantation was the best option for them to avoid the frequent duration of 3 days in a week to have haemodialysis in the dialysis centre. However, there was a steeply increasing gap between the patients who need transplantation and the availability of eligible donors.

According to Haron (2022), most of the organs were donated by living donors with 1752 for kidneys and 92 for liver, while the remaining 767 organs were donated by deceased donors. This statistic displayed that the living donation rate was higher than the after-death donation rate. It was good for the recipients of living-donor kidneys to have better health outcomes and less risk of kidney transplant failure compared to deceased-donor transplants as the surgeons transplanted the kidney promptly after removing it from the donor. The living transplanted organ would function straightaway when compared to a deceased-donor organ, which might take a few days to function properly (UPMC, 2023).

In conclusion, organ donation and transplantation were necessary to lengthen the life of patients as it could improve the general health status and reduce the socio-economic burden of organ failure. According to Doaa et al. (2022), thousands of children and adults would get a renewed chance at living full and active lives each year via organ transplantation. However, the low organ donation rates due to religious beliefs, misconceptions, lack of knowledge and awareness had generated fear and

mistrust about organ donation, which made the organ transplantation program impracticable (Mane et al., 2016).

1.2 Problem statement

The International Registry on Organ Donation and Transplantation (IRODaT) had ranked Malaysia among the lowest for its deceased organ donation rate. Malaysia had a mere 0.2 donors per one million population in 2021. This was an alarming statistic considering the numbers of donors in other countries were much higher with Australia, United States of America and Spain at 16.3, 41.6 and 40.8 people per million population respectively (IRODaT, 2022). This might be due to different views and acceptance, which led to different organ donation rates in every country. Thus, this problem engaged the researcher's interest to assess the attitude towards organ donation among nursing undergraduate students from Faculty of Medicine and Health Science (FMHS), Universiti Malaysia Sarawak (UNIMAS).

According to Palansamy (2022), the National Transplant Resource Centre (NTRC) stated that almost all who pledged to donate their organ after their deaths did not honor their commitment, and also, Utusan Malaysia reported that the statistics from NTRC showed that only 2641 of the 510186 (about 1%) who pledged to become organ donors kept their promise between 1997 until April 2022. This showed that they had low practice habits towards organ donation. Thus, this problem engaged the researcher's interest to assess the practice towards organ donation among nursing undergraduate students from Faculty of Medicine and Health Science (FMHS), Universiti Malaysia Sarawak (UNIMAS).

According to Palansamy (2022), despite the number of organ pledgers was high, but the lack of organ supply especially kidney was due to some pledgers died in conditions that were not suitable for their organs to be donated such as dying at home. For instance, when the organ donors died at home and no one knew, the hospital would miss the opportunity to take their kidneys and they could only take the cornea and bones as they could be taken after a few hours. This demonstrated that they had a low knowledge level towards organ donation, especially about the time duration for which an organ remained viable for transplant. Thus, this problem engaged the researcher's interest to determine the level of knowledge towards organ donation among nursing undergraduate students from Faculty of Medicine and Health Science (FMHS), Universiti Malaysia Sarawak (UNIMAS).

According to Kaur (2022), in the research published by Dr Farida and her colleagues in 2020 that studied the willingness of Malaysians to donate their kidneys, the number of kidney donors varied across ethnic groups with 72.7% Indians, 61.8% Chinese and 33.3% other ethnic groups outweighing 10.6% Malays. This statistic had shown that ethnicity appeared to be a vital factor in influencing the organ donation rates in Malaysia. Thus, this problem engaged the researcher's interest to determine whether the socio-demographic data of nursing undergraduate students from Faculty of Medicine and Health Science (FMHS), Universiti Malaysia Sarawak (UNIMAS) could be the confounding factors in affecting their knowledge, attitude and practice towards organ donation.

1.3 Research questions

The research questions for this study are:

1. What is the level of knowledge towards organ donation among nursing undergraduate students from Faculty of Medicine and Health Science (FMHS), Universiti Malaysia Sarawak (UNIMAS)?
2. What is the attitude towards organ donation among nursing undergraduate students from Faculty of Medicine and Health Science (FMHS), Universiti Malaysia Sarawak (UNIMAS)?
3. What is the practice towards organ donation among nursing undergraduate students from Faculty of Medicine and Health Science (FMHS), Universiti Malaysia Sarawak (UNIMAS)?
4. What is the relationship between knowledge, attitude and practice towards organ donation among nursing undergraduate students from Faculty of Medicine and Health Science (FMHS), Universiti Malaysia Sarawak (UNIMAS)?

1.4 Research aim and objectives

The research aim for this study is to assess the level of knowledge, attitude and practice towards organ donation among nursing undergraduate students from Faculty of Medicine and Health Science (FMHS), Universiti Malaysia Sarawak (UNIMAS).

The research objectives for this study are:

1. To determine the level of knowledge towards organ donation among nursing undergraduate students from Faculty of Medicine and Health Science (FMHS), Universiti Malaysia Sarawak (UNIMAS).
2. To assess the attitude towards organ donation among nursing undergraduate students from Faculty of Medicine and Health Science (FMHS), Universiti Malaysia Sarawak (UNIMAS).
3. To assess the practice towards organ donation among nursing undergraduate students from Faculty of Medicine and Health Science (FMHS), Universiti Malaysia Sarawak (UNIMAS).
4. To examine the relationship between knowledge, attitude and practice towards organ donation among nursing undergraduate students from Faculty of Medicine and Health Science (FMHS), Universiti Malaysia Sarawak (UNIMAS).

1.5 Conceptual framework

The researcher planned to examine the relationship between knowledge, attitude and practice among nursing undergraduate students from Faculty of Medicine and Health Science (FMHS), Universiti Malaysia Sarawak (UNIMAS). Thus, the following hypothesis was generated:

1. Null hypothesis (H₀): There is no relationship between knowledge and attitude or knowledge and practice or attitude and practice towards organ donation among nursing undergraduate students from FMHS UNIMAS.
2. Alternative hypothesis (H_A): There is a relationship between knowledge and attitude or knowledge and practice or attitude and practice or towards organ donation among nursing undergraduate students from FMHS UNIMAS.

The socio-demographic data of nursing undergraduate students such as age, gender, year of study, ethnicity and religion could be the confounding factors in affecting their knowledge, attitude and practice towards organ donation. Then their knowledge level might affect their attitude to donate organs and might further affect their practice to donate organs. Thus, this conceptual framework was developed to guide the researcher throughout the study in the way of testing the hypothesis and predicting the phenomenon of organ donation among nursing undergraduate students from FMHS UNIMAS.

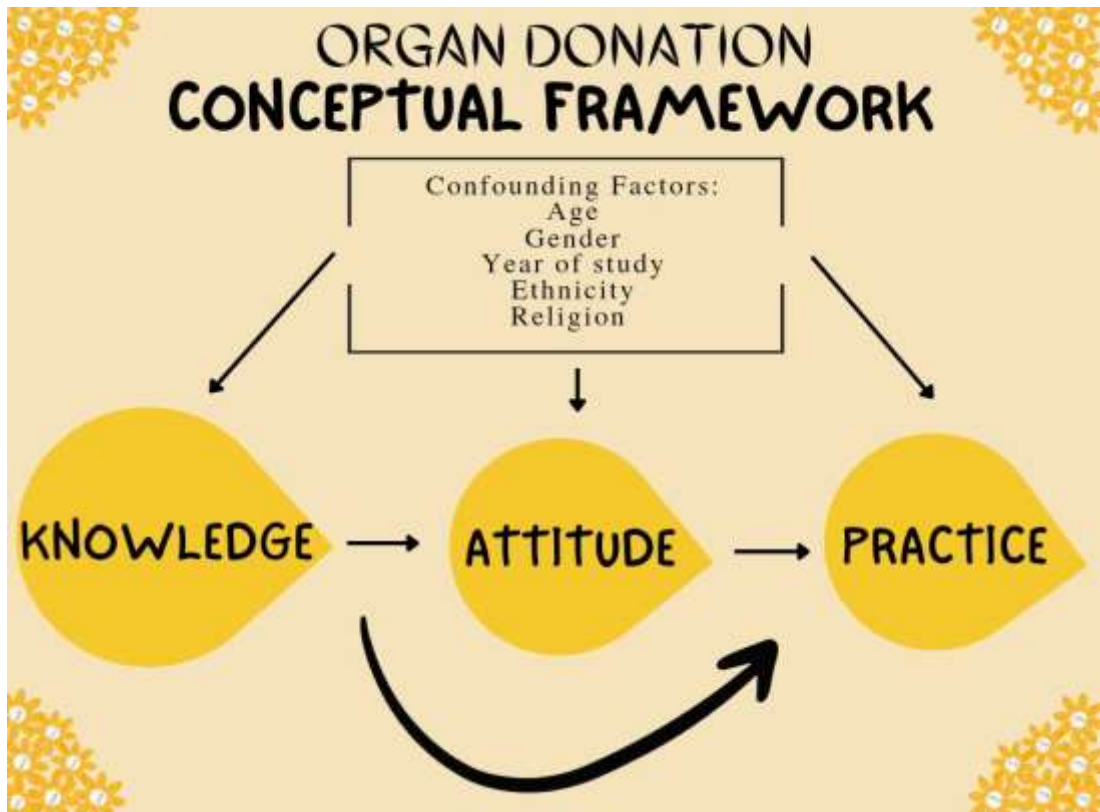


Figure 1.5: Organ donation conceptual framework

1.6 Significance of the study

According to Kasim and Shohor (2021), a successful organ donation promotion was due to knowledge of organ donation and transplantation. Thus, related health care organizations should organize an organ donation education campaign among various health care professionals to ensure they had sufficient knowledge about organ donation as they were the key elements in facilitating the organ donation process. This approach could effectively improve their knowledge and positively affect their ability to identify the potential organ donors, which could contribute to growing numbers of potential organ donors.

From the nursing perspective, this study was significant to raise the awareness regarding organ donation among nursing students via various methods such as education campaigns and social media, besides incorporating it into the curriculum.

According to Dibaba et al. (2020), the awareness about organ donation should be made as a part of school education. This was because the nursing students who would be the future nurses were an important medium to impart the importance of organ donation messages to the public. Therefore, their high level of knowledge and positive attitude can create a positive environment in promoting organ donation for the public.

Undoubtedly, the organ transplant waiting list was always long and a lot of people died while waiting for an organ. Thus, this study was significant to encourage the public to donate their organs while living or even after death so that the life of patients could be prolonged, especially for those who were in the end stage of organ failure. According to PennMedicine (2022), eight lives could be saved through one deceased organ donation. By sensitizing people, especially the younger generation, their knowledge, attitude and perception regarding organ donation could be improved as according to Saini et al. (2019) claimed that in a report done by the National Transplant Resource Centre (2016), youth from the age of 21 and 30 years were easily approachable and had become the highest number of pledgers so far.

1.7 Definition of terms

According to the Cambridge Dictionary (2022), knowledge is described as the awareness, understanding, or information that has been gained through experience. In this study, knowledge is the understanding of organ donation. Different individuals may have different levels of knowledge towards organ donation. The knowledge level was measured using Organ Tissue Donation and Transplantation Knowledge Scale (ODTKS) which the researcher adapted it from Emiral et al. (2017). The total knowledge scores were interpreted using SPSS's visual binning of equal percentiles based on scanned cases with ≤ 7 scores as poor knowledge, 8 scores as fair knowledge and ≥ 9 scores as good knowledge.

According to the Cambridge Dictionary (2022), attitude is defined as a feeling or opinion about something or someone. In the context of this study, attitude is the opinion towards organ donation. Different individuals may have either positive or negative attitudes towards organ donation. The attitude was measured using Organ Donation Attitude Scale (ODAS) which the researcher adapted it from Sayin (2015). The total attitude scores were interpreted using SPSS's visual binning of equal percentiles based on scanned cases with < 70.5 scores as negative attitude and ≥ 70.5 scores as positive attitude.

According to the Cambridge Dictionary (2022), practice is defined as action rather than thought or ideas. In this research, practice is the action of donating organs. Different individuals may have different practice habits regardless of their higher knowledge or positive attitude towards organ donation. The practice was measured using a dichotomous scale with the options "no=0" and "yes=1" which the researcher adapted it from Darlington et al. (2019). The total practice scores were interpreted using

SPSS's visual binning of equal percentiles based on scanned cases with 0 score as bad practice and 1 score as good practice.

According to Law Insider (2023), a nursing undergraduate student is an individual who is enrolled in a nursing educational program for their first degree and holding a temporary permit order to provide nursing care. In this study, nursing undergraduate students from Faculty of Medicine and Health Science (FMHS), Universiti Malaysia Sarawak (UNIMAS) were the targeted participants for the purpose of assessing their knowledge, attitude and practice regarding organ donation.

The Cleveland Clinic (2021) had denoted organ donation as the process of surgically removing an organ or tissue from the organ donor and placing it into the recipient without any compensation. In this research, organ donation can be defined as an individual gives his organs to the person in need such as kidney, heart, liver, lungs, pancreas, intestines, eyes, bones, skin and heart valves, which are the commonly donated organs and tissues.

1.8 Summary

To conclude chapter 1, the background of study, problem statement, research questions, research aims and objectives, conceptual framework, significance of study and definition of terms were being stated and discussed.

CHAPTER 2

Literature Review

2.0 Introduction

To start the review of literature, the researcher searched through Google website by typing the keywords such as knowledge, attitude, practice, organ donation and nursing undergraduate students. Then the researcher read through the selected articles thoroughly and evaluated them. The researcher also tried to search for any related studies which were contrary to the viewpoints of other studies. After that, the researcher organized the selected papers by looking for their patterns and by developing subtopics. Thus, there are three themes, which are knowledge, attitude and practices regarding organ donation are generated in this chapter 2 based on the findings from recent four journal articles dated from 2016 to 2022. The relationship between the variables and theoretical framework also comprises in this chapter 2.

2.1 Knowledge towards organ donation

Based on the findings from four journal articles, most of the students had different knowledge levels about organ donation. In a study conducted by Hasan et al. (2019) to assess the knowledge regarding organ donation amongst the youth of Pakistan, a total of 353 medical and non-medical undergraduate students were obtained using a convenient sampling method. The knowledge score was counted to reflect a respondent's familiarity with organ donation. The findings revealed that most of the students were familiar with organ donation (88.7%), but there were only 44.48% of students knew that there was an age restriction for organ donation and only about 30.9% of students knew about organ donation cards. From the findings, despite most of the

respondents were familiar with organ donation, but the authors classified their overall knowledge as insufficient level. The low knowledge level emphasized the need to spread knowledge amongst undergraduate students, as the authors claimed that the organ donation topic was not emphasized enough in their educational system. Besides, the medical students had higher knowledge regarding organ donation with 65% when compared to non-medical students with 35%. Needless to say, this result was definitely no argument as the medical students always had more knowledge background about organ donation when compared to non-medical students.

In a study conducted by Doaa et al. (2022), a total of 235 year 4 students from pharmacy and nursing faculties (medical) and foreign language and tourism and hotel (non-medical) of Minia University were involved in the study. They were selected using a stratified random sample technique. Organ-Tissue Donation and Transplantation Knowledge Scale (ODTKS) which comprised of 17 items with 2 dimensions was used and its scoring system was classified into 3 categories which are poor, fair and good knowledge. The findings disclosed that 28% had good knowledge, 40% had fair knowledge and 32% had poor knowledge. The medical students had higher knowledge regarding organ donation with 14.7% poor, 47.6% fair and 37.8% good when compared to non-medical students with 58.7% poor, 29.3% fair and 12.0% good, which were similar to the results from Hasan et al (2019) that have mentioned above. Not only that, there were about 46.2% of nursing students had good knowledge when compared to pharmacy students with 36.9%. However, the authors did not clarify the reasons why nursing students had better knowledge than pharmacy students.

According to the study of Mane et al. (2016), there were 96 students with a response rate of 91.7% (88 respondents) obtained from 3rd year medical undergraduate students at a private tertiary care hospital in the rural area of Maduranthakan Taluk,

Kanchipuram district, Tamil Nadu. Based on the results of a total of 8 knowledge items, 100% of students had heard about organ donation; 25% of students knew any center where organ donation can be done and 52.3% of students knew any hospital where an organ transplant was done. These findings indicated that the knowledge towards different aspects of organ donation was unsatisfactory despite all of them having heard about organ donation, but they had difficulties with many other concepts related to it, such as 73.9% of them believed that there was a risk that donated organs could be misused, abused or misappropriated and 3.4% voted that it was true of only organs of young people can be donated. However, the fact was, there was no age limit for donation with the evidence of the oldest organ donor in the United States was 92 in 2021 (NIA, 2022).

According to the study of Keya et al. (2021), the knowledge of organ donation was determined among a total number of 122 year 4 medical undergraduate students at a private medical university in Malaysia by looking at one domain only, which was the eligibility status for organ donation. If the respondents answered it correctly, then they were considered to have adequate knowledge. Thus, there were only 44.3% of students answered it correctly, which revealed that more than half of the students (55.7%) had inadequate knowledge. The limited time and resources on the undergraduate medical curriculum caused the low knowledge of medical students about organ donation was similar to the emphasis on spreading awareness via curricula, media and technology from the studies of Hasan et al. (2019) as they also found out that the students had insufficient knowledge of organ donation. Other than that, looking into one criterion only (eligibility status for organ donation) was not a good way in determining the students' knowledge level, as the other knowledge items such as "Can distinguish between persistent vegetative state and brain death?" and "Can a single donor donate

organs to multiple recipients?” could be another significant point in categorizing their knowledge level especially amongst the medical students.

In short, the study of Hasan et al. (2019), Mane et al. (2016) and Keya et al. (2021) disclosed that the students had insufficient or inadequate or unsatisfactory knowledge towards organ donation, while the study of Doaa et al. (2022) demonstrated that the students had fair knowledge towards organ donation.

2.2 Attitude towards organ donation

In order to assess the attitude towards organ donation, the study of Hasan et al. (2019) found out that about 65.4% of medical and non-medical students were reluctant to donate an organ. This result demonstrated that the students had a negative attitude towards organ donation. However, the medical students had a favourable attitude when compared to non-medical students as there were about 41.4% and 42.0% of medical students were ready to donate an organ and sign an organ donation card respectively. These findings reflected the effect of medical education on a person’s attitude as their greater exposure to patients with organ failure in a hospital environment had made them become more empathetic towards people and they more understood the need of an individual who relied on someone for his survival.

The study of Keya et al. (2021) was in the same line with Hasan et al. (2019) as the medical students had negative attitudes towards organ donation. The authors focused on one domain only, which was ‘willing to donate organs in the future’ in determining the attitude toward organ donation, with the results of about 51.6% of students were reluctant to donate organ in the future. It was acceptable to not consider other criteria (talked recently about organ donation with any patient) as it could not

reflect their readiness to donate organ in the future, but this criterion somehow could reveal their willingness to spread awareness to other people with the effort of increasing the organ donation rate.

The study of Doaa et al. (2022) had contrasting findings from the study of Hasan et al. (2019) and Keya et al. (2021) as more than half of the medical and non-medical students (66%) had a positive attitude towards organ donation. The Organ Donation Attitude Scale (ODAS) was used. The authors interpreted this positive attitude result was due to about 1/3 students had high and fair knowledge towards organ donation with the evidence of $r=.431$, $p=.001(<.01)$. Thus, such an interpretation was made as there was a moderate positive correlation that was significant between knowledge and attitude. In fact, this assumption could not be made based on the correlation test without analyzing and categorizing the attitudes into either positive or negative based on the ODAS scores as the correlation did not imply any causation.

The study of Mane et al. (2016) had similar findings to the study of Doaa et al. (2022) as there were about 88.6% of students accepted that they would donate their organ if needed and 67.0% of students even agreed to donate organs from their family members after brainstem death. This result indicated that the students had a favourable attitude towards organ donation. Not only that, there were about 55.7% of students did not think that donating an organ could cause any harmful effects or complications to them which might further improve their attitude towards organ donation.

In short, the study of Hasan et al. (2019) and Keya et al. (2021) showed that the students had negative attitudes towards organ donation, while the study of Mane et al. (2016) and Doaa et al. (2022) found out that the students had positive or favourable attitude towards organ donation.

2.3 Practice towards organ donation

In order to assess the practice level towards organ donation, the findings from the study of Hasan et al. (2019) demonstrated that there were only about 1.3% of medical students ever donated an organ, while there were only about 3.2% and 2.0% of medical and non-medical students respectively had signed an organ donation card. These results indicated that the students had a low practice level towards organ donation. The authors discovered that religion, danger to personal health and fear of side effects were the major barriers concerning organ donation.

The study of Mane et al. (2016) revealed that the students had adequate practice towards organ donation as there were about 26 out of those 78 students who were willing to donate their organs had already made some arrangements to donate their organs after the end of life. However, the one third of students who had made some arrangements to donate their organs after the end of life didn't mean that they had adequate practice towards organ donation, as not more than half of them had made some changes to donate their organs after death. The authors did not clarify how they determine the students' practice level towards organ donation.

In short, the study of Doaa et al. (2022) and Keya et al. (2021) did not discuss the practice level towards organ donation. However, the study of Hasan et al. (2019) and Mane et al. (2016) had opposite findings from each other.

2.4 Relationships between variables

According to Hasan et al. (2019), there was a significant association between knowledge and attitude as the students had insufficient knowledge and negative attitudes towards organ donation. However, the attitude and practice were inconsistent with one another as the authors claimed that the higher knowledge or positive attitude had not directly influenced the practice nevertheless the practice level towards organ donation was low as well.

According to Mane et al. (2016), the students demonstrated a favourable attitude and adequate practices towards organ donation despite their limitations in knowledge about the same. This statement did not clearly describe the relationship in between, as the authors did not demonstrate the results of the correlation test which could confuse the readers to make their own assumptions, such as there was no significant relationship between knowledge and attitude as the students with unsatisfactory knowledge had a positive attitude, or there was a significant relationship between attitude and practice as the students with favourable attitude had adequate practice as well.

As the study of Keya et al. (2021) and Doaa et al. (2022) did not discuss the practice level towards organ donation, thus the relationship between knowledge and attitude was examined only. Based on the study of Keya et al. (2021), there was no statistically significant relationship between knowledge and attitude on organ donation ($r=.088$, $p=.335$), as the students with adequate knowledge on organ donation did not translate into a positive attitude towards it. The finding from the study of Doaa et al. (2022) had different findings from the study of Keya et al. (2021) as there was a positive correlation between knowledge and attitude with the evidence of those students with fair knowledge possessed positive attitude on organ donation.

2.5 Theoretical framework

This organ donation literature was dominated by the Theory of Planned Behaviour (TPB) (Ajzen and Fishbein, 2005). The Theory of Planned Behaviour (TPB) was an extension of the Theory of Reasoned Action (TRA). The Theory of Planned Behaviour (TPB) explained a person's behaviour as resulting from intention, which conversely affected by attitude, subjective norms and perceived behavioural control (PBC). Organ donation behaviour could be triggered or prevented through the main constructs of TPB which were the attitude, subjective norms, and PBC (Latifi et al., 2021). Attitude referred to favourable or unfavourable evaluation of the behaviour in question; subjective norms referred to the perceived social pressure to perform the behaviour; PBC referred to the perceived ease or difficulty of performing the behaviour. The stronger attitudes, subjective norms and PBC, the greater should be behavioural intentions and ultimately behaviour that turned into practice (Latifi et al., 2021).

The background factors, including individual factors (personality, mood, emotion, intelligence, values, stereotypes, general attitudes, experience), social factors (education, age, gender, income, religion, race, ethnicity, culture) and information (knowledge, media, intervention) could affect the organ donation (Latifi et al., 2021). Increasing knowledge, eliminating related cultural issues, minimizing fear due to misunderstanding of brain death, enhancing trust and moral values could facilitate organ donation behaviour. The background factors of the behaviour should be considered in any related intervention as it would affect the main constructs of TPB and further affect the intentions and behaviours. Not only that, focusing on identifying the psychosocial predictors of intentions and behaviours to gain consent for organ donation via getting donor card had resulted in the expansion of decision-making models which utilized the main constructs of TPB, led to a positive effect on organ donation (Latifi et

al., 2021). Thus, removing barriers, changing attitude and facilitating behaviour could make the interventions more effective in enhancing the organ donation (Latifi et al., 2021).

In short, TPB had been applied successfully to predict and explain a wide range of health intentions and behaviours such as smoking, drinking, health services utilization, breastfeeding, substance use and so forth. In this study of organ donation, the researcher used TPB as a guideline with the focus on social and information background factors, attitude and behaviour that ultimately turn into practice. According to (Latifi et al., 2021), the most common facilitator and barriers to become a registered organ donor was the knowledge. So, the researcher wished to test how the knowledge affects the attitude and practice towards organ donation.

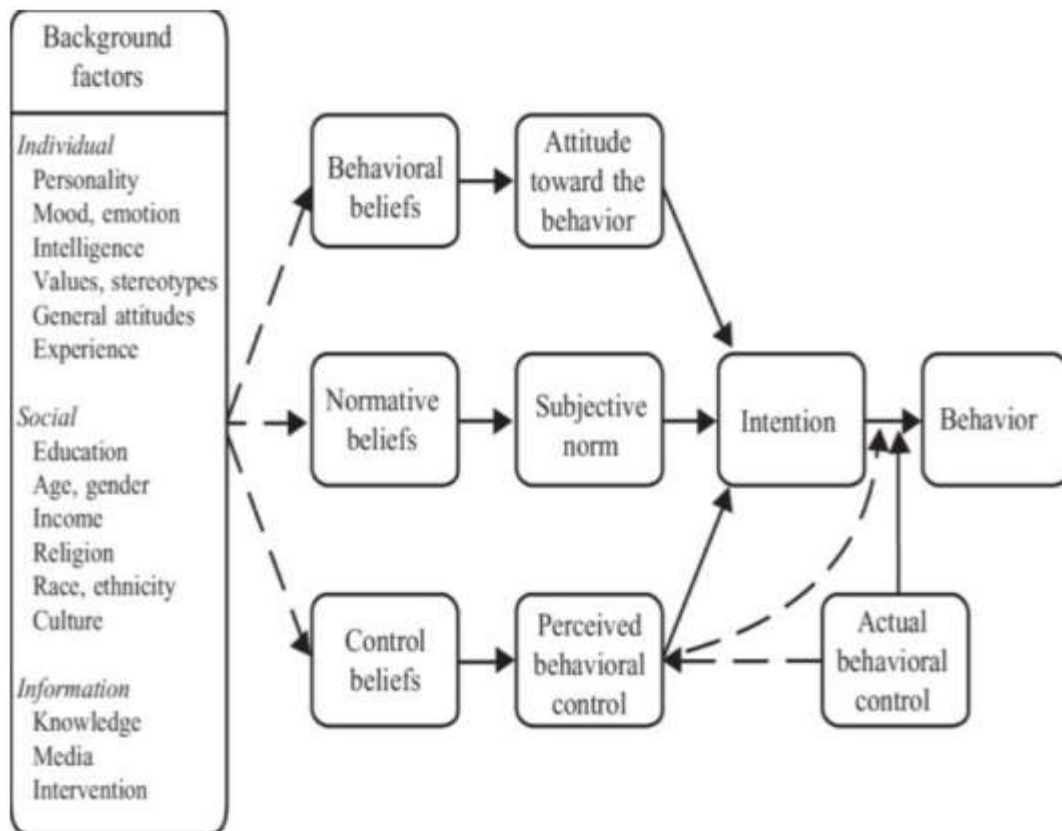


Figure 2.5: The theories of reasoned action and planned behavior (Ajzen and Fishbein, 2005)

2.6 Summary

To conclude chapter 2, the three themes of knowledge, attitude and practice regarding organ donation and also the relationship in between were being discussed. The theoretical framework was also being displayed and discussed.

CHAPTER 3

Methodology

3.0 Introduction

For chapter 3, it includes research design, research setting, population, inclusion and exclusion criteria, sampling method and sampling size, study instrument, ethical consideration, data collection procedure and data analysis method.

3.1 Research design

It was a descriptive cross-sectional quantitative study. The researcher preferred descriptive design because a large amount of data could be collected for detailed analysis and information concerning the current status of the phenomena could be obtained (AAU Libraries, 2023). Cross-sectional design was chosen because multiple variables could be investigated at a single point in time and it was relatively cheap and less time consuming (Thomas, 2022). Quantitative study was used as it could generate objective data which were free from the subjectivity of a qualitative study. Also, with the advantage of data computing software, the results could be distinctly communicated through statistics and numbers (Hoover, 2021).

3.2 Research setting

The descriptive cross-sectional quantitative study was conducted among nursing undergraduate students in Faculty of Medicine and Health Sciences (FMHS) of University Malaysia Sarawak (UNIMAS). Universiti Malaysia Sarawak (UNIMAS) is a public university located in Kota Samarahan, Sarawak with a total of 10 faculties

offering 92 programmes (Times Higher Education, 2023). Faculty of Medicine and Health Sciences (FMHS) offers two types of undergraduate programmes, which are Doctor of Medicine Programme and Bachelor of Nursing with Honours Programme.

3.3 Population

All 174 nursing undergraduate students from Year 2, Year 3 and Year 4 who had registered in the cohort 2022/2023 were the study population. There were a total number of 63 students from Year 2, 59 students from Year 3 and 52 students from Year 4.

3.4 Inclusion and exclusion criteria

The Year 2, Year 3 and Year 4 senior nursing students who had more clinical experiences were included as they had more years in studying and may have more understanding about this study (Doa et al., 2022). Those senior nursing students who were willing to take part in the study were also included.

A nursing student from Year 3 was excluded from this study because he or she deferred semester due to the health problem at the time of data collection. Year 1 junior nursing students were also excluded as they had yet to undertake any clinical practicum courses at the moment of data collection and they might have less knowledge about this study. A post-registration nursing student from Year 1 was excluded from this study because he or she had working experience in hospital before going further the degree study in FMHS UNIMAS. Also, a total number of 13 randomly chosen nursing students from Year 2, Year 3 and Year 4, accounting from the 10% of 132 sample size were excluded during the actual study as they would be recruited during pilot study.

3.5 Sampling method and sample size

Simple random sampling of probability sampling method was used as every member of the population had an exactly equal opportunity of being selected. Thus, all Year 2, Year 3 and Year 4 nursing students who met the inclusion and exclusion criteria would have an equal chance of being selected in the study.

The researcher had a complete name list of every member of the population which included Year 2, Year 3 and Year 4 nursing students. The researcher assigned the numbers from 1 to 180 based on alphabetical order of student's name regardless of their year of study. For example, the first student with name started with "A" would receive value "1", while the last student with name started with "Z" would receive value "180". Then the researcher used a random number generator of Microsoft Excel sheet 2019 to randomly pick the 132 sample from the 174 population. In order to ensure the selected individual actually participated in the study, the researcher needed to have their contact numbers so that some of the missing information could be keep tracking.

Based on Uakarn et al. (2021), the estimated sample size was calculated using Krejcie & Morgan Formula (1970):

$$n = \frac{x^2 N p (1-p)}{e^2 (N-1) + x^2 p (1-p)}$$

where n = sample size

N = population size (174)

e = acceptable error of sample size (0.05)

$x^2 = 3.841$

p = population proportions (0.5)

$$n = \frac{(3.841)(174)(0.5)(1-0.5)}{(0.05^2)(174-1) + (3.841)(0.5)(1-0.5)}$$

$$n = 119.97$$

$$n \approx 120$$

Based on the calculation, the estimated sample size was 120. According to Catalogue of Bias (2017), there was a rule of thumb with <5% led to little bias, while > 20% posed serious threat to validity. Thus, the researcher decided to add 10% of attrition rate from 120 sample size, accounting to 12 nursing students in covering the missing data. In short, the actual study sample size was 132 nursing students, in which 44 students from Year 2, 49 students from Year 3 and 39 students from Year 4.

3.6 Study instrument

A semi-structured questionnaire was created from the adaptation of several studies after a comprehensive literature search with the purposes of assessing the knowledge, attitude and practice towards organ donation among nursing undergraduate students from FMHS UNIMAS (Emiral et al., 2017), (Sayin, 2015), (Doaa et al., 2022) and (Darlington et al., 2019)

The questionnaire comprised of four sections: first section was the socio-demographics data such as age, gender, ethnicity, religion and year of study in nursing school; second section was the knowledge about organ donation with a total of 10 questions; third section was the attitude towards organ donation with a total of 30 questions; fourth section was the practice towards organ donation with a total of 2 questions.

The knowledge level was measured using Organ Tissue Donation and Transplantation Knowledge Scale (ODTKS) which the researcher adapted it from Emiral et al. (2017). The previous study done by Emiral et al. (2017) showed a Cronbach's alpha of $\alpha = 0.88$. In this current study, it consisted of 10 items with 2 dimensions, which the first dimension was about donor characteristics that included 4 questions, while the second dimension was about legal, ethics and medical process related to organ donation and transplantation that included 6 questions. The responses were recorded on a dichotomous scale as "yes", "no" or "I don't know" which the researcher adopted it from Doaa et al. (2022). The correct answer was scored as (1) grade, while the incorrect answer or I don't know was scored as (0) grade. There was a total of 4 knowledge items in incorrect statement which were questions number 2, 8, 9 and 10.

The scores for knowledge items were totalled up and converted it into a percentage score. Since the total scores of knowledge items for this current study was totally different from the study of Doaa et al. (2022), thus the scoring system was adapted using SPSS's visual binning of equal percentiles based on scanned cases. In the context of this study, the total scores for knowledge items were 10 grades. The scoring system was classified into 3 categories as following: poor knowledge if scored ≤ 7 points, fair knowledge if scored 8 points, and good knowledge if scored ≥ 9 points.

The attitude was measured using Organ Donation Attitude Scale (ODAS) which the researcher adapted it from Sayin (2015). The previous study done by Sayin (2015) showed overall Cronbach's alpha of $\alpha = 0.857$ with Cronbach's alpha of $\alpha = 0.925$ for positive dimension items and Cronbach's alpha of $\alpha = 0.914$ for negative dimension items. In this current study, it consisted of 30 items with 3 sub-dimensions, which the first sub-dimension was about humanity and moral conviction (HMC) that included 12 questions, while the second sub-dimension was about fears of medical neglect (FMN) that included 8 questions, and the third sub-dimension was about fears of bodily mutilation (FBM) that included 10 questions. The responses were recorded on a 3-point Likert scale as "disagree=1", "neutral=2" and "agree=3" which the researcher adopted it from Doaa et al. (2022).

The scores for attitude items were totalled up and converted into a percentage score after reverse coding for negative statements of FMN and FBM were done. Since the total scores of attitude items for this current study was totally different from the study of Doaa et al. (2022), thus the scoring system was adapted using SPSS's visual binning of equal percentiles based on scanned cases. In the context of this study, the total scores for attitude items were 90 grades. The scoring system was classified into 2

categories as following: negative attitude if scored < 70.5 points and positive attitude if scored ≥ 70.5 points.

The researcher adapted the items for practice towards organ donation from Darlington et al. (2019) using a dichotomous scale with the options “no=0” and “yes=1”. If the participants chose “yes” for item number 1, then they did not need to answer the item number 2. The scores for practice items were totalled up and converted into a percentage score. Since the total scores of practice items for this current study was totally different from the study of Darlington et al. (2019), thus the scoring system was adapted using SPSS’s visual binning of equal percentiles based on scanned cases. In the context of this study, the total scores for practice items were 1 grade. The scoring system was classified into 2 categories as following: bad practice if \leq scored 0 point and good practice if scored 1 point.

3.7 Ethical consideration

A research approval letter was obtained from Faculty of Medicines and Health Sciences (FMHS), Universiti Malaysia Sarawak (UNIMAS) before starting the study (Please refer to Appendix A).

The researcher had asked permission from the authors from several studies to adapt their questionnaire of study instruments (Please refer to Appendix C).

The participation was voluntary and they would be requested to sign a written informed consent form if they decided to take part in this study after explanation was done and information sheet was provided. After signing the consent form, they still had the right to withdraw the research study at any moments without providing any reasons and there would be no any penalties. It would not affect the relationship they had if any

with the researcher and their data would be destroyed if they withdrew from the study. Besides, the researcher would keep all the questionnaire into a sealed envelope and put it into the personal locked cabinet to strictly preserve their confidentiality and ensure it would only be used for the purpose of this study. Furthermore, the researcher would not collect any identifying information of the participants such as name and matric number to strictly assure their anonymity by assigning code numbers for every participant (Please refer to Appendix B).

3.8 Data collection procedures

The data collection for pilot study and actual study was commenced upon receiving the research approval letter from Faculty of Medicine and Health Science (FMHS), Universiti Malaysia Sarawak (UNIMAS).

3.8.1 Pilot study

For pilot study, it was performed on a total number of 13 randomly chosen nursing students from Year 2, Year 3 and Year 4, accounting from the 10% of 132 sample size. There were 6 students from Year 2, 3 students from Year 3 and 4 students from Year 4 were excluded during the actual study and data analysis.

The pilot study was needed to examine the reliability and validity of questionnaire before the research design was finalized. A reliability test was done to test its internal consistency using IBM SPSS Statistic 26.0 version in order to obtain Kuder-Richardson 20 (KR-20) value for knowledge and practice items while Cronbach alpha value for attitude items. Table 3.8.1 showed the acceptable range of Cronbach's alpha (KR-20) from Sumintono and Widhiarso (2014).

Table 3.8.1: Reliability in Rasch analysis (Sumintono & Widhiarso, 2014)

Statistics	Fit Indices	Interpretation
Cronbach's alpha (KR-20)	< 0.5	Low reliability
	0.5 – 0.6	Moderate reliability
	0.6 – 0.7	Good reliability
	0.7 – 0.8	High reliability
	> 0.8	Very high reliability

For knowledge items, initially the KR-20 value = 0.465, but it changed to 0.503 after deleting 3 questions that are considered too difficult for the participants. Thus, the KR-20 value of 0.503 for knowledge items was acceptable as it fell within the moderate reliability range.

For attitude items, before the reverse coding was done, the overall Cronbach alpha = 0.722 with Cronbach alpha of 0.733 for positive dimensions of humanity and moral conviction (HMC), Cronbach alpha of 0.788 for negative dimensions of fears of medical neglect (FMN) and Cronbach alpha of 0.814 for negative dimensions of fears of bodily mutilation (FBM). However, the overall Cronbach alpha changed to 0.892 after reverse coding was done with Cronbach alpha of 0.733 for positive dimensions of HMC, Cronbach alpha of 0.788 for negative dimensions of FMN and Cronbach alpha of 0.840 for negative dimensions of FBM. Thus, the attitude items were considered to have very high internal consistency reliability.

For practice items, in view of two component variables (“Have you ever donated an organ?” and “Did you ever receive an organ for transplantation?”) had zero variance

and the researcher thought that these two questions were not really important to be assessed, so these two questions were being deleted as the Cronbach alpha was still in the same value of 0.645 no matter that two items were being deleted or not. Thus, the Cronbach alpha of 0.645 for practice items was acceptable as it fell within the good reliability range.

For Organ Tissue Donation and Transplantation Knowledge Scale (ODTKS), Emira et al. (2017) had established a content validity by involving 10 experts which included 3 epidemiology specialists, 1 nephrologist, 1 general surgeon, 1 ethicist, 3 public health research assistants, and 1 Turkish language specialist in reviewing the items in the scale. Emira et al. (2017) also had established a construct validity using factor analysis with the factor loadings varied between 0.48 and 0.75 for first dimension and factor loadings varied between 0.49 and 0.65 for second dimensions.

For Organ Donation Attitude Scale (ODAS), Sayin (2015) tested the face and content validity in order to determine the cultural compatibility by involving 25 monolingual individuals (13 women and 12 men). The ODAS scale was also evaluated by bilingual health care professionals and educators for its content validity, which included a religious cleric, a faculty member in the humanities, a researcher, a primary health care institution medical director and doctor, a lawyer and two professional healthcare professionals. Sayin (2015) also had established a construct validity using factor analysis with the load values of the items in factors 1 (HMC), factor 2 (FMN) and factor 3 (FBM) showing 0.720-0.435, 0.742-0.464 and 0.722-0.513 respectively.

In short, the questionnaire that the researcher created based on the adaptation of the study instrument from Emira et al. (2017) and Sayin (2015) was considered valid to a certain extent.

3.8.2 Actual study

During the actual study, the validated printed questionnaire sheets were distributed to the 132 randomly selected Year 2, Year 3 and Year 4 nursing students in which 44 students from Year 2, 49 students from Year 3 and 39 students from Year 4, who met the inclusion and exclusion criteria during the break time in the classroom. The participants were listened to the explanation of the purposes of the study by the researcher and they were instructed to choose their own answers from the given options without any discussion. Then the participants were given a written informed consent if they were willing to take part in the study and they were encouraged to complete the questionnaire within 10-15 minutes. Once they passed the completed questionnaire to the researcher, they would receive a copy of signed written informed consent form as a proof of involving in the researcher's study.

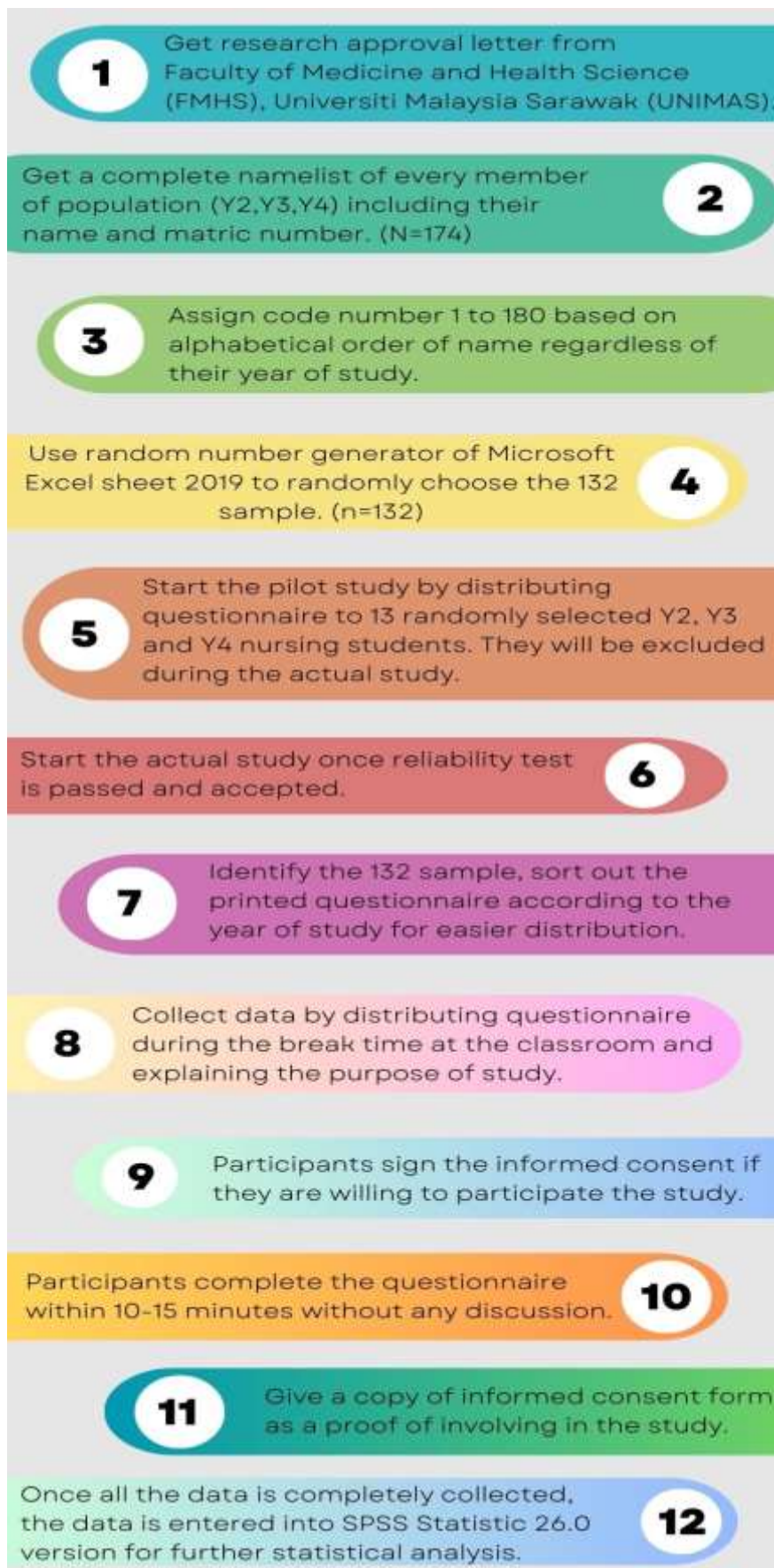


Figure 3.8: Flow chart for data collection procedure

3.9 Data analysis method

Once the researcher completely collected all the data from Year 2, Year 3 and Year 4 nursing students, the researcher would marking the knowledge items first for its correct and incorrect statement before entering all the data into IBM SPSS Statistic 26.0 version for further statistical analysis.

The descriptive and inferential statistics were utilized to analyze all the data. The descriptive statistical analysis such as frequency, percentage, mean and standard deviation was utilized to present all the related variables including socio-demographic data, knowledge towards organ donation, attitude towards organ donation and practice towards organ donation.

In order to test the normality of the continuous data, Kolmogorov-Smirnov test was used as it was suitable to use for $n \geq 50$ (Mishra *et al.*, 2019). The data deviated significantly from the normal distribution if the p-value was $< .05$ (Editage, 2022), meanwhile if when the p-value was $> .05$, then the data were normally distributed (Mishra *et al.*, 2019).

For inferential statistical analysis, the dependent variables could be attitude and practice towards organ donation, while the independent variable could be knowledge and attitude towards organ donation. If the data were normally distributed, then Pearson correlation test was conducted to examine the relationship between the variables. For instance, this statistical test was utilized to examine the relationship between knowledge and attitude or attitude and practice or knowledge and practice. If it could not meet the assumptions or the data were non-normally distributed, then Spearman correlation test was utilized to examine the relationship between the variables. A *p value* $< .05$ was considered statistically significant with the null hypothesis will be rejected.

3.10 Summary

To conclude chapter 3, the research design, research setting, population, inclusion and exclusion criteria, sampling method and sampling size, study instrument, ethical consideration, data collection procedure and data analysis method were being stated and discussed.

CHAPTER 4

Results

4.0 Introduction

For chapter 4, it describes the results of socio-demographic data, knowledge towards organ donation, attitude towards organ donation, practice towards organ donation, relationship between variables and summary of this chapter.

4.1 Socio-demographic data

A total of 132 nursing undergraduate students from FMHS UNIMAS participated in this study with a 100% response rate. The age of the participants ranged from 20 years old to 25 years old, with a mean age of 22.21 (SD \pm 0.996). There was a total of 44 participants from Year 2 (33.3%), 49 participants from Year 3 (37.1%) and 39 participants from Year 4 (29.5%). There were 18 male nursing students (13.6%) and 114 female nursing students (86.4%) participated in this study. For the ethnicity, majority of the participants were indigenous, which was 61 (46.2%), followed by 56 malay (42.4%), 12 chinese (9.1%) and 3 indian (2.3%). For religion, majority of the participants were islam, which was 72 (54.5%), followed by 53 christian (40.2%), 5 buddhist (3.8%), 1 hindu (0.8%) and 1 agnostic (0.8%). Table 4.1 showed the socio-demographic data of the respondents.

Table 4.1: Socio-demographic data

Characteristics		Frequency	Percentage	(Mean ±
		(n)	(%)	SD)
Age				(22.21 ± 0.996)
Year of study	Year 2	44	33.3%	
	Year 3	49	37.1%	
	Year 4	39	29.5%	
Gender	Male	18	13.6%	
	Female	114	86.4%	
Ethnicity	Malay	56	42.4%	
	Chinese	12	9.1%	
	Indian	3	2.3%	
	Indigenous	61	46.2%	
Religion	Islam	72	54.5%	
	Buddha	5	3.8%	
	Christian	53	40.2%	
	Hindu	3	0.8%	
	Others: agnostic	1	0.8%	

4.2 Knowledge towards organ donation

Figure 4.2 reported on the normality distribution for total score of knowledge towards organ donation. According to George and Mallery (2019), the pattern of responses was considered a normal distribution when both skewness and kurtosis values were close to zero. Also, according to Gawali (2023), if the skewness was between -0.5 and 0.5, then the data was nearly symmetrical. During the Kolmogorov-Smirnov test, the skewness value showed -.392 while the kurtosis value showed .236, which displayed that the data was nearly symmetrical. However, Gawali (2023) claimed that the negatively skewed or left-skewed distribution had a long-left tail. Thus, from the Figure 4.2, it displayed that the data was slightly left skewed as the tail of distribution was spreading on the left side.

Nevertheless, according to Editage (2022), the data deviated significantly from the normal distribution if the p -value was less than 0.05. Thus, the total score for knowledge towards organ donation was considered not normally distributed in this study as the p -value = .000.

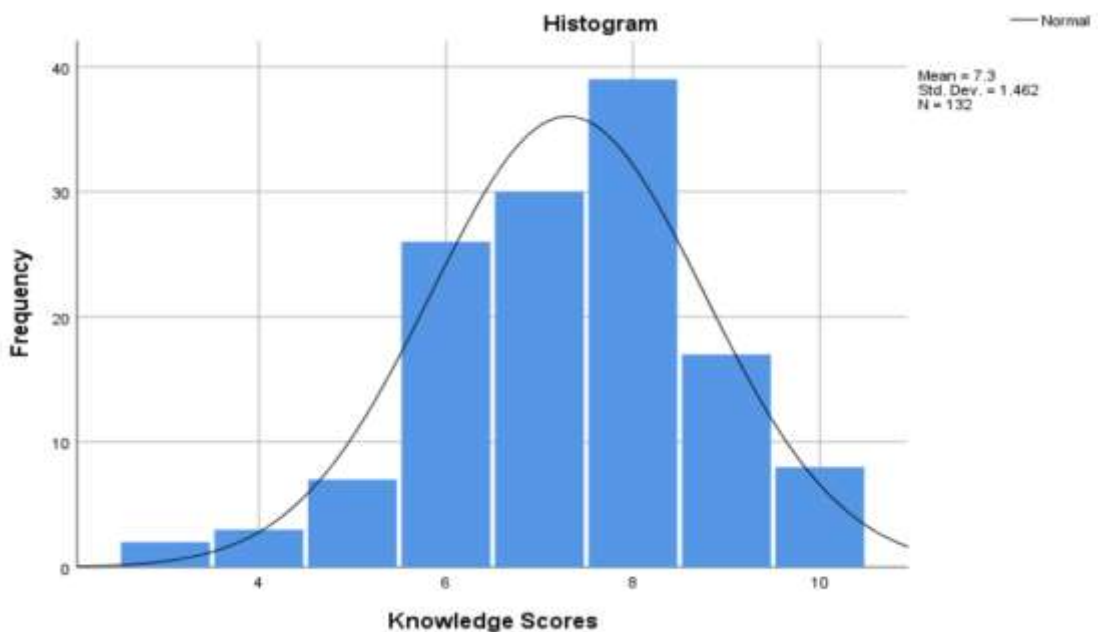


Figure 4.2: Normality distribution for total score of knowledge towards organ donation

Table 4.2a displayed the participants' responses on the knowledge items towards organ donation. Most of the participants answered correctly for item number 1 "organ donation is the process of giving an organ (or a part of an organ tissue) for the purpose of transplantation into another person" (99.2%, n=131), item number 3 "you can donate certain organs while you are alive and healthy" (93.2%, n=123), item number 4 "complications of high blood pressure and diabetes are the common cause for people to have renal failure that further require a kidney transplant" (78.8%, n=104), item number 5 "organ tissue removed from one person could be transplanted to everyone when matching and compatibility tests are passed" (97%, n=128), item number 6 "a matched donor is based on blood group, crossmatch and human leucocytes antigen (HLA) for all transplantation types" (90.9%, n=120) and item number 10 "organ tissue transplantation is performed only between relatives" (85.6%, n=113).

However, 81.1% (n=107) participants answered wrongly for item number 2 "there is an age limit on who can donate organs". Besides, slightly more than half of the participants answered correctly for items number 7 "if I die at a hospital, my family will be asked to grant consent for donation even if I have signed a donor card" (59.8%, n=79) and items number 9 "the final decision belongs to the doctor if a deceased patient has not signed an organ donor card" (61.4%, n=81). Furthermore, slightly more than half of the participants answered wrongly for items number 8 "there is only one type of organ donation: deceased donor (only someone who had brain death declared can donate organ tissue)" (54.5%, n=172).

Table 4.2a: Frequency and percentage distribution for knowledge towards organ donation

No.	Knowledge items	Incorrect n (%)	Correct n (%)
First subdimension: Donor characteristics			
1.	Organ donation is the process of giving an organ (or a part of an organ tissue) for the purpose of transplantation into another person. a. Yes b. No c. I don't know	1 (0.8%)	131 (99.2%)
2. *	There is an age limit on who can donate organs. a. Yes b. No c. I don't know	107 (81.1%)	25 (18.9%)
3.	You can donate certain organs while you are alive and healthy. a. Yes b. No c. I don't know	9 (6.8%)	123 (93.2%)
4.	Complications of high blood pressure and diabetes are the common cause for people to have renal failure that further require a kidney transplant. a. Yes b. No c. I don't know	28 (21.2%)	104 (78.8%)
Second dimension: Legal, ethics, medical process related to organ donation and transplantation			
5.	Organ tissue removed from one person could be transplanted to everyone when matching and compatibility tests are passed. a. Yes b. No c. I don't know	4 (3%)	128 (97%)
6.	A matched donor is based on blood group, crossmatch and human leucocytes antigen (HLA) for all transplantation types. a. Yes b. No c. I don't know	12 (9.1%)	120 (90.9%)

7.	If I die at a hospital, my family will be asked to grant consent for donation even if I have signed a donor card. a. Yes b. No c. I don't know	53 (40.2%)	79 (59.8%)
8. *	There is only one type of organ donation: deceased donor (only someone who had brain death declared can donate organ tissue). a. Yes b. No c. I don't know	72 (54.5%)	60 (45.5%)
9. *	The final decision belongs to the doctor if a deceased patient has not signed an organ donor card. a. Yes b. No c. I don't know	51 (38.6%)	81 (61.4%)
10. *	Organ tissue transplantation is performed only between relatives. a. Yes b. No c. I don't know	19 (14.4%)	113 (85.6%)

* incorrect statement

Overall, the total scores for knowledge towards organ donation among nursing undergraduate students from FMHS UNIMAS ranged from 3 points to 10 points with a mean score of 7.30 (SD±1.462). The scoring system was adapted via Doaa et al (2022) using SPSS's visual binning of equal percentiles based on scanned cases. Thus, in the context of this study, those participants who scored ≥ 9 points were considered to have good knowledge, exactly 8 points were considered to have fair knowledge and ≤ 7 points were considered to have poor knowledge towards organ donation. There were 18.9% (n=25) participants had good knowledge as they scored ≥ 9 points, 29.5% (n=39)

participants had fair knowledge as they score exactly 8 points, and 51.5% (n=68) participants had poor knowledge as they scored ≤ 7 points.

Table 4.2b: Frequency and percentage distribution for level of knowledge towards organ donation

Level of knowledge	n	%
Good knowledge if scores ≥ 9 scores	25	18.9%
Fair knowledge if scores = 8 scores	39	29.5%
Poor knowledge if scores ≤ 7 scores	68	51.5%

4.3 Attitude towards organ donation

Figure 4.3 reported on the normality distribution for total score of attitude towards organ donation. According to George and Mallery (2019), the pattern of responses was considered a normal distribution when both skewness and kurtosis values were close to zero. Also, according to Gawali (2023), if the skewness was between -0.5 and 0.5, then the data was nearly symmetrical. During the Kolmogorov-Smirnov test, the skewness value showed -0.268 while the kurtosis value showed 0.204, which displayed that the data was nearly symmetrical. However, Gawali (2023) claimed that the negatively skewed or left-skewed distribution had a long-left tail. Thus, from the Figure 4.3, it displayed that the data was slightly left skewed as the tail of distribution was spreading on the left side.

Nevertheless, according to Mishra et al. (2019), the data was normally distributed when the p -value was $>.05$. Thus, the total score for attitude towards organ donation was considered normally distributed in this study as the p -value = .20.

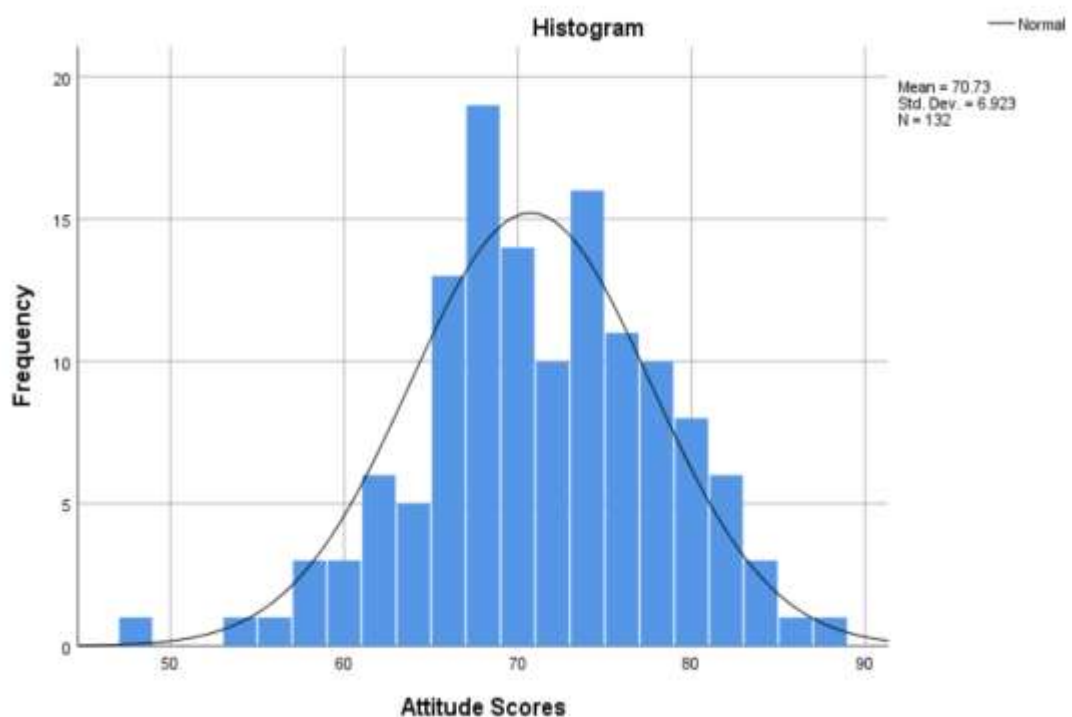


Figure 4.3: Normality distribution for total score of attitude towards organ donation

Table 4.3a summarized the participants' responses on the attitude items towards organ donation. For the first positive sub-dimension of humanity and moral conviction (HMC), most of the participants agreed that "they were giving some people hope for survival" (92.4%, n=122), "they could keep another person living" (94.7%, n=125), "they can offer someone a better chance if being cured" (93.9%, n=124), "they put some parts of the body to beneficial use" (93.2%, n=123) and "they added extra meaning to life" (83.3%, n=110) when donating their organs after death. Besides, there was 79.5% (n=105) thought about the importance of donating their organs after death when hearing about people whose lives were saved after the receipt of an organ. Furthermore, there was slightly less or more than half of the participants agreed that "organ donation endowed death with more meaning and worth" (65.9%, n=87), "donating a body part would enable that part of themselves to remain alive after their death" (47.7%, n=63) and "vowing to donate organs at death was a highly moral act" (58.8%, n=79). However, there was 47% (n=62) had a neutral view towards the statement of "people had a moral responsibility to donate some of their body parts to people in need". Other than that, there was 57.6% (n=76) agreed that "organ donation was a way of being grateful for God", but there was another 40.9% (n=54) agreed that "organ donation should not be considered because the body was a God entrust and had religious meaning after death".

For the second negative sub-dimension of fear of medical neglect (FMN), majority of the respondents disagreed that "a person will be less likely to receive adequate medical care after signing a donor card" (56.8%, n=75), "a person who intended to donate their body parts at death increased the likelihood that one will be pronounced dead even though one was still alive" (53.8%, n=71), "there was still a chance that their life will be taken to save the life of a rich or important person even if special precautions were taken to protect the life of a person who has signed a donor

card” (35.6%, n=47), “organ donors cannot control which organs will be taken even when specified in advance” (53%, n=70) and “medical doctors who remove organs do not treat the body in a dignified manner” (66.7%, n=88).

Besides, there was another group of respondents who maintained at neutral stance towards the statements of “a potential donor’s death will be met by pleasure rather than by vigorous medical treatment by doctors” (56.8%, n=75), “there was a good chance that doctors will be more likely to prematurely declare the death of a person who has signed a donor card” (47.7%, n=63) and “whole bag of tricks of medical will not be used to save the life of someone who has signed a donor card” (43.2%, n=57).

For the third negative sub-dimension of fears of bodily mutilation (FBM), there was a group of participants kept a neutral position towards the statements of “they wanted the whole of their body to die with them when they died” (54.5%, n=72), “they wanted to be buried whole and with all their original parts when they died” (53.8%, n=71), “an intact body was needed for the life after death” (50.8%, n=67), “organ donation left the body disfigured” (47.7%, n=63), “preparing to become an organ donor brought to mind unpleasant thoughts of their own death” (43.2%, n=57), “promising to donate their organs upon their death makes me feel uncomfortable” (47.7%, n=63), “the surest way to bring about their own death was to make plans for it like signing a donor card” (55.3%, n=73) and “other members of their family would object to them signing an organ donor card” (47%, n=62).

However, some of the participants disagreed that “the thought of their body being cut up or taken apart after they were gone made them felt uneasy” (40.9%, n=54) and “a person with someone else’s heart, eyes, kidney and so on was not the same person” (60.6%, n=80).

Table 4.3a: Frequency and percentage distribution for attitude towards organ donation

No.	Attitude items	Disagree n (%)	Neutral n (%)	Agree n (%)
First sub-dimension: Humanity and moral conviction (HMC)				
1.	By agreeing to donate my organs after death, I am giving some people hope for survival.	1 (0.8%)	9 (6.8%)	122 (92.4%)
2.	By donating a body part after my death, I could keep another person living.	1 (0.8%)	6 (4.5%)	125 (94.7%)
3.	By donating an organ at death, one can offer someone a better chance if being cured.	1 (0.8%)	7 (5.3%)	124 (93.9%)
4.	Donating organs at death is a way of putting some parts of the body to beneficial use.	2 (1.5%)	7 (5.3%)	123 (93.2%)
5.	Deciding to donate one's organs at death adds extra meaning to life.	2 (1.5%)	20 (15.2%)	110 (83.3%)
6.	Organ donation endows death with more meaning and worth.	3 (2.3%)	42 (31.8%)	87 (65.9%)
7.	Donating a body part would enable that part of myself to remain alive after my death.	14 (10.6%)	55 (41.7%)	63 (47.7%)
8.	Hearing about people whose lives were saved after the receipt of an organ makes me think about the importance of donating my organs after death.	1 (0.8%)	26 (19.7%)	105 (79.5%)
9.	Organ donation is a way of being grateful for God.	4 (3%)	52 (39.4%)	76 (57.6%)
10.	Organ donation should not be considered because the body is a God entrust and has religious meaning after death.	54 (40.9%)	62 (47%)	16 (12.1%)
11.	Vowing to donate organs at death is a highly moral act.	2 (1.5%)	51 (38.6%)	79 (58.8%)
12.	People have a moral responsibility to donate some of their body parts to people in need.	20 (15.2%)	62 (47%)	50 (37.9%)
Second sub-dimension: Fears of medical neglect (FMN)				
13.	A person will be less likely to receive adequate medical care after signing a donor card.	75 (56.8%)	43 (32.6%)	14 (10.6%)

14.	A potential donor's death will be met by pleasure rather than by vigorous medical treatment by doctors.	34 (25.8%)	75 (56.8%)	23 (17.4%)
15.	There is a good chance that doctors will be more likely to prematurely declare the death of a person who has signed a donor card.	54 (40.9%)	63 (47.7%)	15 (11.4%)
16.	A person who intends to donate their body parts at death increases the likelihood that one will be pronounced dead even though one is still alive.	71 (53.8%)	43 (32.6%)	18 (13.6%)
17.	Even if special precautions were taken to protect the life of a person who has signed a donor card, there is still a chance that their life will be taken to save the life of a rich or important person.	47 (35.6%)	39 (29.5%)	46 (34.8%)
18.	Whole bag of tricks of medical will not be used to save the life of someone who has signed a donor card.	56 (42.4%)	57 (43.2%)	19 (14.4%)
19.	Organ donors cannot control which organs will be taken even when specified in advance.	70 (53%)	39 (29.5%)	23 (17.4%)
20.	Medical doctors who remove organs do not treat the body in a dignified manner.	88 (66.7%)	34 (25.8%)	10 (7.6%)
Third sub-dimension: Fears of bodily mutilation (FBM)				
21.	When I die, I want the whole of my body to die with me.	17 (12.9%)	72 (54.5%)	43 (32.6%)
22.	When I die, I want to be buried whole and with all my original parts.	14 (10.6%)	71 (53.8%)	47 (35.6%)
23.	An intact body is needed for the life after death.	43 (32.6%)	67 (50.8%)	22 (16.7%)
24.	Organ donation leaves the body disfigured.	50 (37.9%)	63 (47.7%)	19 (14.4%)
25.	Preparing to become an organ donor brings to mind unpleasant thoughts of my own death.	51 (38.6%)	57 (43.2%)	24 (18.2%)
26.	Promising to donate my organs upon my death makes me feel uncomfortable.	49 (37.1%)	63 (47.7%)	20 (15.2%)

27.	The thought of my body being cut up or taken apart after I'm gone makes me feel uneasy.	54 (40.9%)	51 (38.6%)	27 (20.5%)
28.	A person with someone else's heart, eyes, kidney etc. is not the same person.	80 (60.6%)	33 (25%)	19 (14.4%)
29.	The surest way to bring about my own death is to make plans for it, like signing a donor card.	25 (18.9%)	73 (55.3%)	34 (25.8%)
30.	Other members of my family would object to me signing an organ donor card.	28 (21.2%)	62 (47%)	42 (31.8%)

Overall, the total scores for attitude towards organ donation among nursing undergraduate students from FMHS UNIMAS ranged from 48 points to 87 points with a mean score of 70.73 (SD±6.923). The scoring system was adapted via Doaa et al (2022) using SPSS's visual binning of equal percentiles based on scanned cases. Thus, in the context of this study, those participants who scored ≥ 70.5 points were considered to have positive attitude, while < 70.5 points were considered to have negative attitude. The level of attitude was at the equal distribution as 50% (n=66) of the students had either negative or positive attitude towards organ donation due to there was equal amount of the student scored < 70.5 points and ≥ 70.5 points.

Table 4.3b: Frequency and percentage distribution for level of attitude towards organ donation

Level of attitude	n	%
Negative attitude if scores < 70.5 scores	66	50%
Positive attitude if scores ≥ 70.5 scores	66	50%

4.4 Practice towards organ donation

Figure 4.4 reported on the normality distribution for total score of practice towards organ donation. According to George and Mallery (2019), the pattern of responses was considered a normal distribution when both skewness and kurtosis values were close to zero. Also, according to Gawali (2023), if the skewness was between 0.5 and 1.0, then the data was slightly positive skewed. During the Kolmogorov-Smirnov test, the skewness value showed 0.828 while the kurtosis value showed -1.335, which displayed that the data was slightly positive skewed. Also, Gawali (2023) claimed that the positively skewed or right-skewed distribution had a long-right tail. Thus, from the Figure 4.4, it displayed that the data was slightly right skewed as the tail of distribution was spreading on the right side.

Nevertheless, according to Editage (2022), the data deviated significantly from the normal distribution if the p -value was less than 0.05. Thus, the total score for practice towards organ donation was considered not normally distributed in this study as the p -value = .0000.

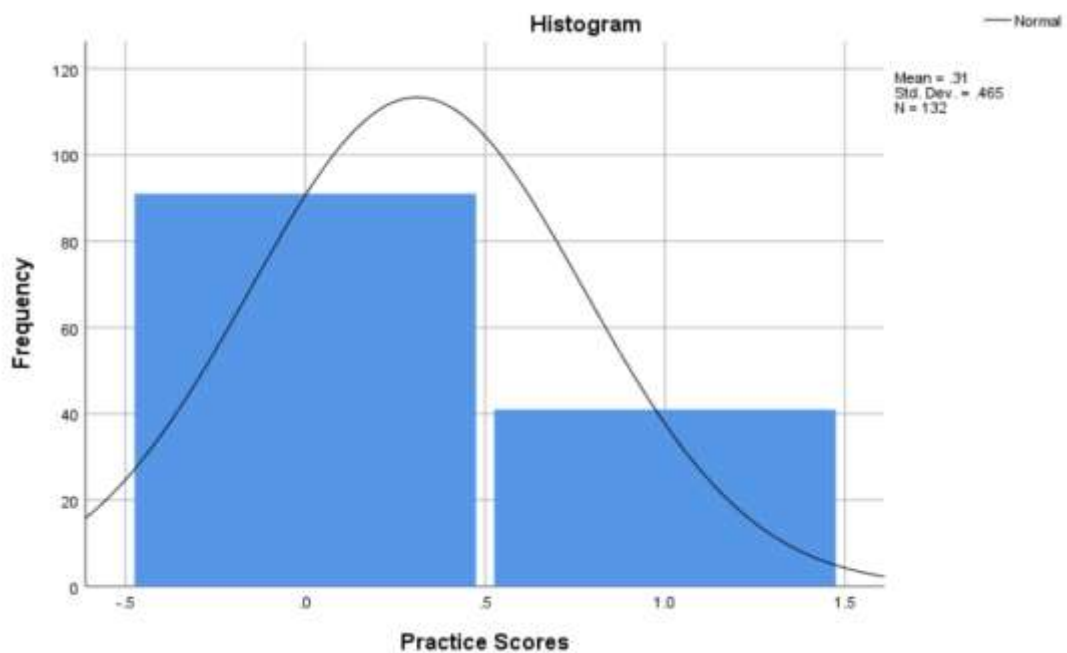


Figure 4.4: Normality distribution for total score of practice towards organ donation

Table 4.4a demonstrated the participants' responses on the practice items towards organ donation. Majority of the respondents (92.4%, n=122) never pledged or signed to donate an organ, but there were few respondents (7.6%, n=10) ever pledged or signed to donate an organ. Those respondents who never pledged or signed to donate an organ have made some behaviour changes to be willing in signing the organ donation card (23.5%, n=31), but still majority of them did not show willingness in signing the organ donation card (68.9%, n=91).

Table 4.4a: Frequency and percentage distribution for practice towards organ donation

No.	Practice items	No n (%)	Yes n (%)
1.	Have you ever pledged/ signed to donate an organ?	122 (92.4%)	10 (7.6%)
2.	If no, will you be willing to sign an organ donation in the future?	91 (68.9%)	31 (23.5%)

Overall, the total scores for practice towards organ donation among nursing undergraduate students from FMHS UNIMAS ranged from 0 point to 1 point with a mean score of 0.31 (SD±0.465). The scoring system was adapted via Darlington et al. (2019) using SPSS's visual binning of equal percentiles based on scanned cases. Thus, in the context of this study, those participants who scored 1 point were considered to have good practice towards organ donation, while those participants who scored 0 point were considered to have bad practice towards organ donation. There were 68.9% (n=91) participants had bad practice towards organ donation as they scored 0 point, while 31.1% (n=41) participants had good practice towards organ donation as they scored 1 point.

Table 4.4b: Frequency and percentage distribution for level of practice towards organ donation

Level of practice	n	%
Bad practice if scores <50% (0 score)	91	68.9%
Good practice if scores \geq 50% (1 score)	41	31.1%

4.5 Relationship between variables

Since the normality test of Kolmogorov-Smirnov test demonstrated that the total score for knowledge and practice towards organ donation were considered not normally distributed as the $p\text{-value} = .000 (<.05)$, while the total score for attitude towards organ donation was considered normally distributed as the $p\text{-value} = .20 (>.05)$, thus a non-parametric test of Spearman rho correlation coefficient was used to examine the relationship between knowledge, attitude and practice towards organ donation.

Table 4.5 displayed the correlation between the variables. According to Cronk (2018), correlations with an absolute value >0.7 were considered strong, <0.3 were considered weak, while between 0.3 to 0.7 were considered moderate. A weak positive correlation that was not significant was found between knowledge and attitude towards organ donation with $r=.037$, $n=132$, $p=.672 (>.05)$. Thus, there was no statistically significant relationship between knowledge and attitude towards organ donation among nursing undergraduate students from FMHS UNIMAS. It showed that the students with fair and good knowledge on organ donation did not translate it into positive attitude. However, it was important to note that correlation did not imply any causation.

A weak negative correlation that was not significant was found between knowledge and practice towards organ donation with $r=-.030$, $n=132$, $p=.735 (>.05)$. Thus, there was no statistically significant relationship between knowledge and practice towards organ donation among nursing undergraduate students from FMHS UNIMAS. It demonstrated that the students with fair and good knowledge on organ donation did not translate it into good practice. However, it was important to note that correlation did not imply any causation.

A moderate positive correlation that was significant was found between attitude and practice towards organ donation with $r=.405$, $n=132$, $p=.000$ ($<.01$). Thus, there was a statistically significant relationship between attitude and practice towards organ donation among nursing undergraduate students from FMHS UNIMAS. It showed that the students with positive attitude towards organ donation did translate it into good practice. However, it was important to note that correlation did not imply any causation.

Table 4.5: Correlation between knowledge, attitude and practice towards organ donation

Knowledge		Attitude	Practice		
Spearman's rho	Knowledge	Correlation	1.000	.037	-.030
		Coefficient			
		Sig. (2-tailed)	.	.672	.735
		N	132	132	132
	Attitude	Correlation	.037	1.000	.405**
		Coefficient			
		Sig. (2-tailed)	.672	.	.000
		N	132	132	132
	Practice	Correlation	-.030	.405**	1.000
Coefficient					
Sig. (2-tailed)		.735	.000	.	
	N	132	132	132	

***Correlation is significant at the 0.01 level (2-tailed)*

4.6 Summary

In short, a total of 132 nursing undergraduate students from FMHS UNIMAS had participated in this study. There were 18.9% (n=25) participants had good knowledge, 29.5% (n=39) participants had fair knowledge, and 51.5% (n=68) participants had poor knowledge. The level of attitude was at the equal distribution as 50% (n=66) of the students had either negative or positive attitude towards organ donation. There were 68.9% (n=91) participants had bad practice, while 31.1% (n=41) participants had good practice towards organ donation.

Since the normality test of Kolmogorov-Smirnov test demonstrated that the total score for knowledge and practice towards organ donation were not normally distributed, while the total score for attitude towards organ donation was normally distributed, thus a non-parametric test of Spearman rho correlation coefficient was used to examine the relationship between knowledge, attitude and practice towards organ donation.

Nevertheless, there was no significant correlation found between knowledge and attitude with $r=.037$, $p=.672$ ($>.05$) or knowledge and practice with $r=-.030$, $p=.735$ ($>.05$), while there was a significant correlation found between attitude and practice with $r=.405$, $p=.000$ ($<.001$) towards organ donation among nursing undergraduate students from FMHS UNIMAS.

CHAPTER 5

Discussion and Conclusion

5.0 Introduction

For chapter 5, it discusses the finding of the results on knowledge, attitude and practice towards organ donation, relationship between the variables and summary of findings. In addition, implications of the study, recommendation, limitation of the study and conclusion are addressed in this chapter 5 as well.

5.1 Knowledge towards organ donation

The nursing undergraduate students from FMHS UNIMAS demonstrated a poor knowledge level towards organ donation with a mean score of 7.31 ($SD \pm 1.462$). There was more than half of the students (51.5%, $n=68$) had poor knowledge and less than one third of the students had fair knowledge (29.5%, $n=39$) and good knowledge (18.9%, $n=25$) towards organ donation. The results of this study indicated that the organ donation topic should be incorporated into the educational system either during lectures or curriculum. Plus, various health awareness campaign should be organized to improve the students' knowledge level towards organ donation. The studies done by Keya et al. (2022), Hasan et al. (2019), Doaa et al. (2022), Darlington et al. (2019) and Mane et al. (2016) were also emphasized on such alternatives in enhancing the students' knowledge level towards organ donation.

The results of this current study were in the same line with the study done by Hasan et al. (2019) as despite most of the students (88.67%) were familiar with organ donation, but the authors classified their overall knowledge as insufficient level. This might due to majority of the students did not have the knowledge regarding the

procedure of organ donation (77.9%) and did not know about the organ donation card (69.12%). Also, slightly more than half of the students (55.52%) answered wrongly for the question of “Is there is an age limit for organ donation?” which similar to the results of current study and Dibaba et al. (2017). Thus, Hasan et al. (2019) claimed that the organ donation topic was not emphasized enough in their educational system due to the low knowledge level among the medical and non-medical undergraduate students.

Besides, the results of this current study were found to be similar with the study done by Mane et al. (2016) as the level of knowledge towards different aspect of organ donation was unsatisfactory even though all of the students had heard about organ donation, majority of the students (96.6%) could tell the most common organs which can be donated and almost all the students answered correctly for the question “ Is it true that only organs of young people can be donated?”, but they still faced difficulties with many other concepts related to it, such as more than half of the students (73.9%) believed that there was a danger that donated organs could be misuses, abused or misappropriated. Thus, Mane et al. (2016) asserted that the gaps in knowledge towards organ donation were about the same among the medical students and educational interventions were necessary to disseminate the information about organ donation.

In addition, another similar finding was found in the study done by Keya et al. (2022) as more than half of the students (55.7%) had inadequate knowledge on organ donation by looking at one domain only, which was if the students answered correctly for the eligibility status of organ donation, then they were considered to have adequate knowledge. Keya et al. (2022) claimed that the limited knowledge about organ donation was likely a result of the limited time and resources on this organ donation subject in the undergraduate curriculum. Also, lack of formal teaching about the identification of potential donors created difficulties in approaching the family members about the

possibility of organ donation, which could possibly reduce the organ donation rate. However, Keya et al. (2022) should look into other criteria as well in determining the students' knowledge level. For example, almost all the students (98.4%) answered correctly for the statement of "A single donor can donate to multiple recipients", which might show the students had adequate knowledge towards organ donation.

On the contrary, the opposite findings were found in the study done by Dibaba et al. (2020) as the students had adequate and high level of knowledge towards organ donation. Majority of the students had answered correctly for the statement of "Have you ever heard about organ donation?", "The term 'organ donation' means?", "Do you know the meaning of brain death?", "Which organs can be donated?" and "All religions support organ donation". However, there were more than half of the students (75%) answered wrongly for the statement of "Is there age limit for donating organs?" which similar to the result of current study showing majority of the students (81.1%, n=107) answered wrongly for the question of "There is an age limit on who can donate organs".

5.2 Attitude towards organ donation

The nursing undergraduate students from FMHS UNIMAS demonstrated equal distribution level of attitude with a mean score of 70.73 (SD \pm 6.923) which the researcher could not differentiate it into negative or positive attitude. This result was out of the researcher's expectation as there were exactly same amount of the students had negative and positive attitude (50%, n=66). It might due to most of the students maintained neutral viewpoint towards the sub-dimension of fear of medical neglect and bodily mutilation such as the doctors would be more likely to prematurely declare the death of a person who has signed a donor card, a potential donor's death would be met by pleasure rather than by vigorous medical treatment, intact body with all the original parts was needed for the life after death, organ donation left the body disfigured, and preparing to become an organ donor brought to mind unpleasant thoughts of their own death.

For those nursing students with positive attitude, it might due to the effect of clinical practicum as their greater exposure to the patients with organ failure in the hospital environment has shaped them to become more empathetic and more understand the need of an individual who relied on someone for their survival. Additionally, it might also due to most of the students agreed to give some people hope for survival, keep another person living, offer someone a better chance if being cured, put some parts of the body to beneficial use and add extra meaning to life when donating their organs after death. However, for those nursing students with negative attitude, the clinical involvement did not really help them in overcoming the belief of medical neglect and bodily mutilation as they might have some misconceptions towards the organ donation which might be affected by their family or religious background.

There were none of the studies were found to have the similar results as the current study. The study done by Mane et al. (2016) reported that the students had positive and favourable attitude towards organ donation. This was due to majority of the students (88.6%) would like to donate their organs if need comes. Also, more than half of the students (67%) even agreed to donate organs from their family members after brainstem death and 55.7% of the students did not think about donating an organ can cause harmful complications to them.

The study done by Doaa et al. (2022) also had the similar findings as Mane et al. (2016). There were more than half of the students (66%) had positive attitude towards organ donation and transplantation. Doaa et al. (2022) interpreted this positive attitude result was due to more than one third of the students had good and fair knowledge towards organ donation. Not only that, there was less than half of the students agreed with preparing to become an organ donor brought to mind undesirable thoughts of their own death and an intact body was needed for the life after death, but the current study revealed that majority of the students kept a neutral position towards the statements of preparing to become an organ donor brought to mind unpleasant thoughts of their own death (43.2%, n=57) and an intact body was needed for the life after death (50.8%, n=67). From Doaa et al. (2022)'s point of view, the students should conquer well with the fears of bodily mutilation in their mindset as an organ donor.

The study done by Hasan et al. (2019) had opposite findings from Mane et al. (2016) and Doaa et al. (2022) as the students showed negative attitude towards organ donation with the evidence of there was around 65% of them were not willing to donate an organ and sign an organ donation card. Hasan et al. (2019) claimed that immediate intervention was needed to modify the student's attitude as it might due to the insufficient emphasis, lack of exposure, lack of understanding about the process, fear

of commercial usage of organs, lack of counselling, lack of campaign and lack of focus on addressing potential donor issues.

The study of Keya et al. (2021) was in the same line with Hasan et al. (2019) as the students showed negative attitude towards organ donation with the evidence of there was 63% of them were not willing to donate an organ in the future. Keya et al. (2021) claimed that the reasons behind unwillingness towards organ donation were psychological anxiety, myths, fear of disfigurement, misconceptions and religious belief.

5.3 Practice towards organ donation

The nursing undergraduate students from FMHS UNIMAS demonstrated bad practice towards organ donation with a mean score of 0.31 (SD \pm 0.465). There were 68.9% (n=91) of the students had bad practice, while 31.1% (n=41) of the students had good practice towards organ donation. From those students with good practice, there were about 23.5% (n=31) of them who never pledged or signed to donate an organ but already made some behaviour changes to be willing in signing the organ donation card in the future.

The results of this current study were found to be similar with the study done by Hasan et al. (2019) as only few students (2.55%) had signed an organ donation card, while majority of the students (97.45%) had not signed an organ donation card. Hasan et al. (2019) did not assume the students to have good practice even though there were only about 2 students who ever donated an organ. Hasan et al. (2019) indicated that regardless of the students had more knowledge or positive attitude, it had not directly affected the practice. Thus, the future campaigns with the focus on eliminating the barriers should be organized to facilitate an increased practice habits towards organ donation.

However, the opposite findings had been reported in the study done by Mane et al. (2016) as from those majority of the students (88.63%, n=78) who showed positive attitude in readying themselves to donate their organs if need comes, there were about one third of them (29.54%, n=26) had already made some arrangements to donate their organs after death, but there were about more than half of them had not ready to made some arrangements to donate their organs after death (70.46%, n=52). Nevertheless, Mane et al. (2016) still considered the students having adequate practice towards organ donation as long as some of them turned the positive attitude into action of practices.

Furthermore, the unclear findings were noticed through the study done by Darlington et al. (2019) as there were no much discrepancy between those having good practice (52.71%, n=224) and bad practice (47.29%, n=201) towards organ donation according to the year of study. Thus, the researcher did not assert that the overall practice results done by Darlington et al. (2019) could be presume as good practice towards organ donation. However, Darlington et al. (2019) claimed that the durable changes in practice can be brought by changing the attitude. So, in relation to the statement of changing attitude could bring changes in practice, the researcher could make an assumption which was the study done by Darlington et al. (2019) still showed unsatisfactory level towards the practice habits of organ donation since majority of the students had negative attitude towards organ donation.

5.4 Relationship between variables

5.4.1 Relationship between knowledge and attitude

In this current study, there was no statistically significant relationship between knowledge and attitude towards organ donation. This meant that the level of knowledge towards organ donation would not affect the level of attitude towards organ donation among the nursing undergraduate students. However, correlation did not imply causation as the result of this study reported that the students with poor knowledge level had same level of attitude either negative or positive towards organ donation.

The result of this study was found to be similar with the study done by Keya et al. (2022) with the weak positive correlation that was not significant, $r=.088$, $p=.335$ ($>.05$). However, it revealed that the adequate knowledge among the students did not translate it into positive attitude, which was showing poor commitment towards organ donation. Keya et al. (2022) claimed that the limited time and resources on organ donation subject in the undergraduate curriculum led to limited knowledge about organ donation. Also, Keya et al. (2022) stated that psychological anxiety, myths, fear of disfigurement, misconceptions about organ donation and religious belief were the reasons behind unwillingness toward organ donation. This implied that provision of relevant organ donation information was necessary to strengthen their understanding and attitude towards organ donation.

The result of this study was found to be contrary to the study done by Doaa et al. (2022) with the moderate positive correlation that was significant, $r=.431$, $p=.001$ ($<.01$), which was showing good commitment towards organ donation. From Doaa et al. (2022)'s point of view, the result of more than half of studied students had positive attitude was due to more than half of the studied students had high and fair knowledge.

The result of this study was also found to be opposite to the study done by Hasan et al. (2019) as there was a significant association between knowledge and attitude with the evidence of the students had insufficient knowledge and negative attitude towards organ donation. Hasan et al. (2019) claimed that lack of understanding about the process, lack of exposure, lack of counselling, lack of campaign and insufficient emphasis lead to the discrepancy between adequate knowledge and willingness to donate organ.

5.4.2 Relationship between knowledge and practice

In this current study, there was no statistically significant relationship between knowledge and practice towards organ donation. This meant that the level of knowledge towards organ donation would not affect the level of practice towards organ donation among the nursing undergraduate students. However, correlation did not imply causation as the result of this study revealed that the poor knowledge level among the nursing students did not translate it into good practice towards organ donation.

The result of this study was found to be similar to the study done by Hasan et al. (2019) as regardless of the lower or higher knowledge level, it had not directly affected the practice towards organ donation. This might be due to Hasan et al. (2019) claimed that focused on potential obstacles they face in the process of organ donation could encourage the youth in general to donate organs.

5.4.3 Relationship between attitude and practice

In this current study, there was a statistically significant relationship between attitude and practice towards organ donation. This meant that the level of attitude towards organ donation would affect the level of practice towards organ donation among the nursing undergraduate students. However, correlation did not imply causation as the result of this study reported that the students with equal distribution level of attitude either negative or positive did not translate it into good practice towards organ donation.

The result of this study was found to be contrary to the study done by Hasan et al. (2019) as regardless of the positive or negative attitude, it had not directly affected the practice towards organ donation. This might be due to Hasan et al. (2019) claimed that focused on potential obstacles they face in the process of organ donation could encourage the youth in general to donate organs.

5.5 Summary of findings

Overall, the nursing undergraduate students from FMHS UNIMAS were found to have poor knowledge level, equal distribution level of attitude either negative or positive and bad practice habits towards organ donation. However, the study revealed that there was no significant relationship between knowledge and attitude or knowledge and practice, but there was a significant relationship between attitude and practice towards organ donation. It was important to note that correlation did not imply any causation. Thus, it was essential to instil adequate knowledge from the perspectives of donor characteristics or legal, ethical and medical process related to organ donation and transplantation; nurture positive attitude by enhancing humanity and moral conviction, conquering the fears of medical neglect and bodily mutilation; and implement good practice by not merely signing the organ donation card but also honouring the commitment when needs came. Therefore, in order to have satisfactory level of knowledge, attitude and practice among the nursing undergraduate students, the educational interventions and health awareness campaigns were needed to boost the organ donation rate and resolve organ shortage issue.

5.6 Implications of the study

Since most of the nursing undergraduate students had poor knowledge level, equal distribution level of attitude either negative or positive, and also gaps still existed in their practice towards organ donation, thus the results and discussion from this study implied the need for an early introduction of organ donation course into curriculum to instil knowledge, nurture attitude and implement practice among the nursing students. Besides, the need for an intensified and sustained education regarding organ donation signified the nursing institution to ensure the nursing students acquired adequate and accurate information especially during their clinical posting that had greater chance of exposure to organ donation awareness campaign organized by the healthcare institutions.

In addition, to nurture positive attitude and good practice, the clinical supervisors had the responsibilities of bringing the nursing students attended the organ donation awareness campaign organized by the hospitals rather than only focusing on the ward routines and procedures. Apart from the healthcare personnels spreading awareness towards organ donation, the clinical supervisors also had obligation in consolidating the nursing students' informed decision making when signing the organ donation card by encouraging the nursing students to get rid of the misconceptions and improving their willingness towards organ donation.

5.7 Recommendation

Since the nursing undergraduate students from FMHS UNIMAS had poor knowledge level, equal distribution level of attitude either negative or positive, and bad practice habits towards organ donation, thus it could be further improved via various alternatives such as organized seminars and health awareness programs, enriched the university library with necessary posters, booklets and leaflets, early introduced comprehensive lectures of organ donation and transplantation into school curriculum. These alternatives eventually could help the students to have better understanding and tackle some misconceptions related to organ donation. With the additional knowledge acquired, the students could make broader thinking and informed decision about organ donation besides became an organ donation disseminator to further raise awareness of organ shortage in the society.

In addition, this current study could be further enhanced by recruiting a larger sample of nursing students including those from different nursing institutions, or comparing the nursing students with medical students, or comparing the medical students with non-medical students, or the public with different educational background to have extensive findings about organ donation.

Not only that, this current study could be further improved by utilizing different statistical analysis method such as independent T test, one way ANOVA and chi-square test to have widespread findings about organ donation. Furthermore, a future study regarding perception, barriers and approach towards organ donation might needed to resolve the stereotypes and ultimately raise the organ donation rate.

5.8 Limitations of the study

There were some flaws in this study and improvement might needed since the researcher is a novice. Other than that, the findings might not be able to generalize all the nursing undergraduate students in FMHS UNIMAS as the Year 1 nursing students were excluded since they had yet to undertake any clinical practicum courses at the moment of data collection. Also, the results could not represent the whole nursing students in Malaysia and could not generalize to the other nursing institutions.

In addition, there were the possibility of the respondents indulging in any discussion or searching answers through Internet while filling the questionnaire despite specific instructions were announced of no test was being taken. Thus, the self-response bias could not be ruled out as the accuracy of the results was heavily dependent on the honesty and understanding of the respondents.

Furthermore, the social desirability could be another source of bias as the participants might tend to answer in the ways they thought society expected them when they confronted with questions of organ donation that could prompt them to feel moral pressure. Thus, this study might rather overestimate a positive attitude towards organ donation among the participants, but the findings of results revealed that the participants had indistinguishable attitude either negative or positive towards organ donation.

5.9 Conclusions

In the upcoming years, Malaysia would have a large number of patients with chronic diseases that could face a scarcity in receiving donated organs necessary for transplantation. Indeed, organ donation and transplantation were the cost-effective treatment option for many end-stage organ failure diseases. However, the key to success in organ donation greatly depended on the individuals' knowledge, attitude and practice. Therefore, the nursing students who would be the future healthcare professionals played a vital role in bridging the gap between organ donors and receivers, highlighting the need for inculcating organ donation topic into educational system or school curriculum. These approaches eventually could help to ensure the nursing students acquired adequate knowledge, accepting attitude and good practice towards organ donation so that they were able to disseminate clear information, advocate the rights of general population, increase the public awareness, motivation and commitment, in which can turn to provide life benefits to many patients suffering from end-stage diseases.

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APPENDIX A: Research approval letter

Pejabat Akademik
Fakulti Perubatan dan Sains Kesihatan
Academic Office
Faculty of Medicine & Health Sciences
☎: 581000 samb 5375
☎: 665152

UNIVERSITI MALAYSIA
SARAWAK
94300 Kota Samarahan

MEMORANDUM

Reference : UNIMAS/NC-21.05/03-03 Jld. 8 (47)
To : Kong Su Ghee (70108)
Year 4 Undergraduate Nursing Student
Faculty of Medicine and Health Sciences
From : Dean
Faculty of Medicine and Health Sciences
Date : 16 March 2023
Subject : **Final Year Project - Research Approval: Knowledge, Attitude and Practice Towards Organ Donation among Nursing Undergraduate Students FMHS UNIMAS**

The above matter is referred.

The Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS) has provided research **APPROVAL** for this Final Year Project research on 21st February 2023 by the Department of Nursing, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS). The Final Year Project research details as mentioned below:

Student Name : Kong Su Ghee
Student ID : 70108
No. IC : 990912-13-5174
Research Title : *Knowledge, Attitude and Practice Towards Organ Donation among Nursing Undergraduate Students FMHS UNIMAS*
Supervisor Name : Ms Chen Ai Ling
Emel Address : alchen@unimas.my
Supervisor H/P : 0198492699

All records and data are to be kept strictly **CONFIDENTIAL** and can only be used for the purpose of this study. All precautions are to be taken to maintain data confidentiality.

Permission from all relevant heads of departments/units where the study will be carried out must be obtained prior to the study.

Please note that the approval is valid from **March 2023** to **March 2024** only. The reference number for this letter must be stated in all correspondence related to this study to facilitate the process.

Thank you with regards and well wishes.

Yours sincerely,


Professor Dr. Asri bin Said
Dean

c.c : Deputy Dean of Undergraduate
: Head of Nursing Department
: Bachelor of Nursing with Honours Programme Coordinator
: MDJ4652 Final Year Project 1 Course Coordinator
: MDJ4663 Final Year Project 2 Course Coordinator

APPENDIX B: Participant's informed consent form



Title of Research Study:

Knowledge, Attitude and Practice Towards Organ Donation
Among Nursing Undergraduate Students FMHS UNIMAS

Informed Consent Form

The Informed Consent Form is designed to confirm that the participants have given all relevant information about the research study. Before deciding to participate in this study, it is important to understand why the research is being done and what will it involve. Please read the following information carefully and ask the researcher if there is anything that is unclear or if you need more information.

You are invited to participate in a research study titled Knowledge, Attitude and Practice Towards Organ Donation Among Nursing Undergraduate Students FMHS UNIMAS with the aims of assessing their level of knowledge, attitude and practice towards organ donation. The study is being conducted by Kong Su Ghee, Year 4 Nursing Students, from FMHS UNIMAS under the supervision of Miss Chen Ai Ling, a lecturer from FMHS UNIMAS.

Study procedures: This questionnaire consists of 4 sections, which are section A (socio-demographic data); section B (knowledge about organ donation); section C (attitude towards organ donation) and section D (practice towards organ donation). You are encouraged to answer all the questions without any discussions and the questionnaire should take about 10-15 minutes to complete it.

Risks: This study does not have any risks which may harm the well-being of participants.

Benefits: There will be no direct benefits to you for your participation in this study. However, the researcher hopes that the information obtained from this study may help you to gain some knowledge about organ donation.

Confidentiality: Your responses to this questionnaire will be anonymous and confidential. Every effort will be made by the researcher to preserve your confidentiality including the following:

1. Assign code numbers for every participant during the data analysis.
2. Keep the completed questionnaire in a sealed envelope and put it into the researcher's personal locked cabinet. Only the researcher will be able to see the questionnaire you participated in and no one will be able to see your answers for the questionnaire.
3. When the study is completed and the data have been analyzed, the list linking participant's name to the study numbers will be destroyed. The study findings will be presented only in summary form and your name would not be used in any report.

Contact information: If you have any questions about this research study, you may contact the researcher via WhatsApp 0168643346. If you have any questions about your rights as a research participant, please contact the Research Ethics Committee from Faculty of Medicine and Health Science (FMHS).

Voluntary participation: Your participation in this study is voluntary. If you decide to take part in this study, you will be asked to sign a consent form. After signing the consent form, you are still free to withdraw the research study at any time without giving any reasons and there will be no any penalties. Withdrawing from this study will not affect the relationship you have, if any, with the researcher. If you withdraw from the study before the data collection is completed, then your data will be destroyed.

Consent: I have read and understand the above information and voluntarily agree to participate in this research study. By signing this consent form, I certify that all information I have given is true and coherent to the best of my knowledge.

Subject

Name

IC No.

Matric number

Contact number

Signature

Date

Researcher

Name

IC No.

Matric number

Contact number

Signature

Date

APPENDIX C: Permission to use questionnaire

I. Emiral et al. (2017)

Adaptation of OTDKS questionnaire

 **kong sughee** <kongsughee@hotmail.com>
4/25/2023 9:53 PM

To: gulsum.ozturk@gmail.com

 **OTDKS.pdf**
393.38 KB

Greetings!

Dear Mr. Gülsüm Öztürk Emiral,

I'm Kong Su Ghee, year 4 nursing student from Universiti Malaysia Sarawak (UNIMAS). Currently, I'm conducting a research study for the course MDI4664 Final Year Project II. I have selected "Knowledge, Attitude and Practice Towards Organ Donation Among Nursing Undergraduate Students from Faculty of Medicine and Health Science, UNIMAS as my research title.


I would like to seek your permission in adapting the organ-tissue donation and transplantation knowledge scale (OTDKS). Also, could I have the answer scheme which easier for me to assess the participants answer the questions correctly or wrongly.

I have attached the article that you have published as your reference. Hope I could receive the good news from you soon.


Thank you in advance!

Regards,
Kong Su Ghee
Year 4 Nursing Student Unimas.

Re: Adaptation of OTDKS questionnaire

 **Gülüm Öztürk Emiral** <dr.gulsum.ozturk@gmail.com>
1:27 AM


To: kong sughee

 **donation.english.docx**
14.06 KB

Yes, of course you can.
true, false, ı don't know
false, don't know= 0 puan
true answer=1 puan
don't forget reverse items.

Saygı ve sevgilerimle/Best Regards
Ankara Çankaya İlçe Sağlık Müdürlüğü/ Cankaya Health Directorate
Uzm.Dr.Gülüm ÖZTÜRK EMİRAL
Halk Sağlığı Uzmanı/Public Health specialist

RE: Adaptation of OTDKS questionnaire

 **kong sughee** <kongsughee@hotmail.com>
8:25 AM

To: Gülüm Öztürk Emiral


I'm so glad to have your reply of email. I will take note of the reverse coding for incorrect statements.

Also, I would like to make a double confirmation with you about the incorrect statements. Is it only 11 items are incorrect statement which includes (number 2, 6, 8, 9, 10, 11, 15, 18, 20, 22, 23)?


Regards,
Kong Su Ghee
Year 4 Nursing Student Unimas.

II. Sayin (2015)

Adaptation of ODAS questionnaire

 kong sughee <kongsughee@hotmail.com>
4/25/2023 10:04 PM

To: yaziledoo@gmail.com

 ODAS.pdf
194.29 KB

Greetings!

Dear Assistant Professor Yazile Yazici Sayin,

I'm Kong Su Ghee, year 4 nursing student from Universiti Malaysia Sarawak (UNIMAS). Currently, I'm conducting a research study for the course MD14664 Final Year Project II. I have selected "Knowledge, Attitude and Practice Towards Organ Donation Among Nursing Undergraduate Students from Faculty of Medicine and Health Science, UNIMAS as my research title.

I would like to seek your permission in adapting the organ donation attitude scale (ODAS). Also, I would like to make a double confirmation with you about the positive and negative dimensions of the attitude items. Factor 1: Humanity and moral conviction (HMC) are the positive dimensions, while Factor 2: Fear of medical neglect (FMN) and Factor 3: Fears of bodily mutilation (FBM) are the negative dimensions, right? Is that all the items from FMN and FBM are negative statements which need reverse coding?


I have attached the article that you have published as your reference. Hope I could receive your reply soon.

Thank you in advance!


Regards,
Kong Su Ghee
Year 4 Nursing Student Unimas.

III. Doaa et al. (2022)

Adaptation of ODTKS and ODAS questionnaire

 kong sughee <kongsughee@hotmail.com>
8:58 AM

To: doaa.doaaeisa@gmail.com

 Doaa et al (2022) Organ donatio...
492.31 KB

Greetings!

Dear Dr. Doaa Eisa Mohamed,

I'm Kong Su Ghee, year 4 nursing student from Universiti Malaysia Sarawak (UNIMAS). Currently, I have to conduct a research study for the course MD14653 Final Year Project I. I have selected "Knowledge, Attitude and Practice Towards Organ Donation Among Nursing Undergraduate Students FMHS UNIMAS" as my research title.

Therefore, I would like to seek your permission for the following statements:

1. Could I adapt your questionnaire when assessing the knowledge and attitude on organ donation?
2. Could you send me a complete questionnaire for ODTKS and ODAS questionnaire?
3. Could you send me the answer scheme for the ODTKS knowledge items?
4. How do you determine the scoring system? Or do you have any formula when calculating the scoring system so that I can modify it based on suitability?
5. May I know which statements are negative which need to do reverse coding especially for ODAS questionnaire?


I have attached the research article that you have published as your reference. I really need your help in my research study. Hope I will receive your reply soon.

Hope you have a great day. Thank you.


Regards,
Kong Su Ghee
Year 4 Nursing Student UNIMAS.

IV. Darlington et al. (2019)

Seeking Permission to Adapt Your Questionnaire of Research Study

 **kong sughee <kongsughee@hotmail.com>**
11/10/2022 11:52 AM

To: dannycarbin2@gmail.com

 7.pdf
225.59 KB

Greetings!

Dear Dr. Danny Darlington,

I'm Kong Su Ghee, year 4 nursing student from Universiti Malaysia Sarawak (UNIMAS). Currently, I have to conduct a research study for the course MDM653 Final Year Project I. I have selected "Knowledge, Attitude and Practice Towards Organ Donation Among Nursing Undergraduate Students FMHS UNIMAS" as my research title.

Therefore, I would like to seek your permission for the following statements:


1. Could you send me a complete questionnaire and it would be good if you could send me the answer scheme for the knowledge/ attitude/ practice items?
2. Could I adapt your questionnaire when assessing the knowledge, attitude and practice on organ donation?
3. Do you have any formula when calculating the scoring system so that I can modify it based on suitability?

I have attached the research article that you have published as your reference. Hope I will receive good news from you soon and you may email me via kongsughee@hotmail.com.

Hope you have a great day. Thank you.

Regards,
Kong Su Ghee
Year 4 Nursing Student UNIMAS.

Re: Seeking Permission to Adapt Your Questionnaire of Research Study


 **Danny Darlington <dannycarbin2@gmail.com>**
11/10/2022 12:06 PM

To: kong sughee

Hi for sure you can use the questionnaire. Please go ahead. Can you find it in the annexures. You can copy paste the table and leave the others empty. So you can use it in your study

Dr. Danny Darlington Carbin,
Senior Robotic Surgery Fellow in Pelvic Uro-oncology,
Royal Surrey County Hospital,
Guildford, United Kingdom

RE: Seeking Permission to Adapt Your Questionnaire of Research Study

 **kong sughee <kongsughee@hotmail.com>**
11/13/2022 10:29 AM

To: Danny Darlington

Hi Dr Danny Darlington. Sorry to inform you that you didn't attach the annexures at your published research article. Also, could I have the answer scheme for the questionnaire especially for the knowledge items?

Regards,
Kong Su Ghee
Year 4 Nursing Student UNIMAS.

V. Almutairi (2020)

From: kongsughee
Sent: Thursday, November 10, 2022 12:07 PM
To: sa.almutairi@mmu.edu.sa
Subject: Seeking Permission to Adapt Your Questionnaire of Research Study

Greetings!

Dear Dr Sulaiman Almutairi.

I'm Kong Su Ghee, year 4 nursing student from Universiti Malaysia Sarawak (UNIMAS). Currently, I have to conduct a research study for the course MDJ4653 Final Year Project 1. I have selected "Knowledge, Attitude and Practice Towards Organ Donation Among Nursing Undergraduate Students FMHS UNIMAS" as my research title.

Therefore, I would like to seek your permission for the following statements:

1. Could you send me a complete questionnaire and it would be good if you could send me the answer scheme for the knowledge/ attitude/ practice items?
2. Could I adapt your questionnaire when assessing the knowledge, attitude and practice on organ donation?
3. Do you have any formula when calculating the scoring system so that I can modify it based on suitability?

I have attached the research article that you have published as your reference. Hope I will receive good news from you soon and you may email me via kongsughee@hotmail.com.

Hope you have a great day. Thank you.

Regards,
Kong Su Ghee
Year 4 Nursing Student UNIMAS.

APPENDIX D: Data collection instrument

Section A: Socio-demographic data

Please fill in your information and tick (/) at the relevant column.

1. Year of study:

() Year 2

() Year 3

() Year 4

2. Age:

3. Gender:

() Male

() Female

4. Ethnicity:

() Malay

() Chinese

() Indian

() Indigenous **# specify it:**

5. Religion:

() Islam

() Buddha

() Christian

() Hindu

Others:

Section B: Knowledge towards organ donation

There are a total of 10 questions for knowledge towards organ donation. Y represents "Yes", N represents "No" and IDK represents "I don't know". The correct answer is scored as (1) grade, while the incorrect answer or I don't know is scored as (0) grade. Please tick (/) your options at the relevant column.

NO.	ITEMS	Y	N	IDK
First subdimension: Donor characteristics				
1.	Organ donation is the process of giving an organ (or a part of an organ tissue) for the purpose of transplantation into another person.			
2.	There is an age limit on who can donate organs.			
3.	You can donate certain organs while you are alive and healthy.			
4.	Complications of high blood pressure and diabetes are the common cause for people to have renal failure that further require a kidney transplant.			
Second dimension: Legal, ethics, medical process related to organ donation and transplantation				
5.	Organ tissue removed from one person could be transplanted to everyone when matching and compatibility tests are passed.			
6.	A matched donor is based on blood group, crossmatch and human leucocytes antigen (HLA) for all transplantation types.			
7.	If I die at a hospital, my family will be asked to grant consent for donation even if I have signed a donor card.			
8.	There is only one type of organ donation: deceased donor (only someone who had brain death declared can donate organ tissue).			
9.	The final decision belongs to the doctor if a deceased patient has not signed an organ donor card.			
10.	Organ tissue transplantation is performed only between relatives.			

Section C: Attitude towards organ donation

There are a total of 30 questions for attitude towards organ donation. The rating scale for DISAGREE=1, NEUTRAL=2 and AGREE=3. Please tick (/) your options at the relevant column.

NO.	ITEMS	DISAGREE = 1	NEUTRAL = 2	AGREE = 3
First sub-dimension: Humanity and moral conviction (HMC)				
1.	By agreeing to donate my organs after death, I am giving some people hope for survival.			
2.	By donating a body part after my death, I could keep another person living.			
3.	By donating an organ at death, one can offer someone a better chance if being cured.			
4.	Donating organs at death is a way of putting some parts of the body to beneficial use.			
5.	Deciding to donate one's organs at death adds extra meaning to life.			
6.	Organ donation endows death with more meaning and worth.			
7.	Donating a body part would enable that part of myself to remain alive after my death.			
8.	Hearing about people whose lives were saved after the receipt of an organ makes me think about the importance of donating my organs after death.			
9.	Organ donation is a way of being grateful for God.			
10.	Organ donation should not be considered because the body is a God entrust and has religious meaning after death.			
11.	Vowing to donate organs at death is a highly moral act.			
12.	People have a moral responsibility to donate some of their body parts to people in need.			
Second sub-dimension: Fears of medical neglect (FMN)				
13.	A person will be less likely to receive adequate medical care after signing a donor card.			
14.	A potential donor's death will be met by pleasure rather than by vigorous medical treatment by doctors.			
15.	There is a good chance that doctors will be more likely to prematurely declare the death of a person who has signed a donor card.			
16.	A person who intends to donate their body parts at death increases the likelihood that one will be pronounced dead even though one is still alive.			

17.	Even if special precautions were taken to protect the life of a person who has signed a donor card, there is still a chance that their life will be taken to save the life of a rich or important person.			
18.	Whole bag of tricks of medical will not be used to save the life of someone who has signed a donor card.			
19.	Organ donors cannot control which organs will be taken even when specified in advance.			
20.	Medical doctors who remove organs do not treat the body in a dignified manner.			
Third sub-dimension: Fears of bodily mutilation (FBM)				
21.	When I die, I want the whole of my body to die with me.			
22.	When I die, I want to be buried whole and with all my original parts.			
23.	An intact body is needed for the life after death.			
24.	Organ donation leaves the body disfigured.			
25.	Preparing to become an organ donor brings to mind unpleasant thoughts of my own death.			
26.	Promising to donate my organs upon my death makes me feel uncomfortable.			
27.	The thought of my body being cut up or taken apart after I'm gone makes me feel uneasy.			
28.	A person with someone else's heart, eyes, kidney etc. is not the same person.			
29.	The surest way to bring about my own death is to make plans for it, like signing a donor card.			
30.	Other members of my family would object to me signing an organ donor card.			

Section D: Practice towards organ donation

There are a total of 2 questions for practice towards organ donation. Y represents "Yes" and N represents "No". The rating scale for N=0 and Y=1. Please tick (/) your options at the relevant column.

NO.	ITMES	N=0	Y=1
1.	Have you ever pledged/ signed to donate an organ?		
1.	If no, will you be willing to sign an organ donation in the future?		

* If you choose "yes" for item number 1, then you do not need to answer the item number 2.

APPENDIX E: Gantt chart

Activity	2022			2023					
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
Determination of research title	█								
Literature review		█							
Meeting with supervisor	█	█	█	█		█	█	█	█
Submit oral defense slides		█							
Ethical approval			█	█	█				
Submission of first draft		█							
FYP 1: Submission of research proposal			█						
Data collection						█	█		
Data analysis							█	█	
Writing up report							█	█	█
Draft checking								█	
Poster presentation									█
Make corrections									█
FYP 2: Submission of final project									█

APPENDIX F: Budget planning

ITEMS	PRICE
Internet (UNIMAS Wifi)	-
SPSS software	RM 5
FYP I: Printing proposal defense PPT & turnitin report	RM 10
FYP I: Printing and binding proposal report & turnitin report	RM 25
FYP II: Printing questionnaire	RM 30
FYP II: Printing poster	RM 10
FYP II: Printing and binding final report & turnitin report	RM 20
TOTAL	RM 100