

**KNOWLEDGE AND WILLINGNESS REGARDING
ORGAN DONATION AMONG MEDICAL AND
NURSING STUDENTS AT HEALTH CAMPUS,
UNIVERSITI SAINS MALAYSIA (USM)**

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by

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LIST OF ABBREVIATION

HUSM	Hospital Universiti Sains Malaysia
USM	Universiti Sains Malaysia
WHO	World Health Organization

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ABSTRACT

This study aimed to estimate the level of knowledge and willingness among medical and nursing students regarding organ donation at health campus, Universiti Sains Malaysia (USM). Of the 169 of students enrolled in this study, medical students (87) and nursing students (73). The students were selected using comparative cross-sectional study, non-probability random sampling technique. Data were obtained using self-administered questionnaire, a combination of three questionnaires to assess the knowledge and willingness of medical and nursing students regarding organ donation. Three experts tested the content validity of instruments, and the reliability obtained by Cronbach's alpha coefficients were 0.70 and 0.86 respectively. The data were analysed with SPSS version 22, using descriptive statistic, *Spearman correlation* test and *Mann-Whitney* Test for answering the research questions. The result showed the majority of the students had high knowledge (94.1%) and willingness (95.9%) regarding organ donation which is the medical students 90 (93.8%) had high level of knowledge on research and willingness 92 (95.8%). The nursing students had high level of knowledge 69 (94.5%) and the willingness 70 (95.9%) regarding organ donation. The results was shows the weak significant correlation between knowledge and willingness level ($r=0.227$). There are also shows the significant difference in knowledge ($p = 0.40$) and willingness ($p = 0.97$) between medical and nursing students. In conclusion, the findings of this study will help the medical and nursing students to become an organ donor and readiness as a future health professionals.

**PENGETAHUAN DAN KESEDIAAN MENGENAI PENDERMAAN ORGAN
DALAM KALANGAN PELAJAR PERUBATAN DAN KEJURURAWATAN DI
KAMPUS KESIHATAN, UNIVERSITI SAINS MALAYSIA (USM)**

ABSTRAK

Kajian berbentuk perbandingan keratan lintas dan bercirikan deskriptif ini bertujuan untuk menganggarkan tahap pengetahuan dan kesediaan dalam kalangan pelajar perubatan dan kejururawatan mengenai pendermaan organ di kampus kesihatan, Universiti Sains Malaysia (USM). Seramai 169 orang pelajar dimasukkan dalam kajian ini, pelajar perubatan (87) dan pelajar kejururawatan (73). Para pelajar telah dipilih menggunakan teknik persampelan bukan kebarangkalian. Instrumen yang digunakan dalam kajian ini adalah hasil gabungan tiga soal selidik untuk menilai tahap pengetahuan dan kesediaan pelajar perubatan dan kejururawatan mengenai pendermaan organ. Tiga orang pakar berpengalaman telah menguji tahap kesahan dalam kajian, dan kebolehpercayaan dalam penyelidikan pula diperolehi melalui kajian rintis dengan hasil Cronbach alpha masing-masing 0.70 dan 0.86. Data seterusnya diproses menggunakan SPSS versi 22.0, menggunakan statistic deskriptif, ujian *Korelasi Spearman* dan ujian *Mann-Whitney* untuk menjawab soalan kajian. Berdasarkan keputusan kajian ini, majoriti daripada pelajar (94.1%) mempunyai tahap pengetahuan dan kesediaan (95.9%) mengenai pendermaan organ yang mana mewakili pelajar perubatan 90 (93.8%) telah mempunyai tahap pengetahuan yang tinggi berkaitan kajian dan tahap kesediaan yang tinggi 92 (95.8%). Pelajar kejururawatan telah mempunyai tahap pengetahuan 69 (94.5%) yang tinggi dan tahap kesediaan yang tinggi juga 70 (95.9%) mengenai pendermaan organ. Keputusan kajian menunjukkan perkaitan antara tahap pengetahuan dan kesediaan dan korelasi positif yang lemah ($r=0.227$). Keputusan kajian juga menunjukkan perbezaan yang signifikan dalam pengetahuan ($p = 0.40$) dan kesediaan ($p = 0.97$) antara pelajar perubatan dan kejururawatan. Secara keseluruhannya, diharapkan hasil kajian ini dapat membantu pelajar perubatan dan kejururawatan untuk menjadi seorang penderma organ dan bersedia sebagai seorang professional kesihatan pada masa depan.

CHAPTER 1

INTRODUCTION

1.1 Background of The Study

Organ donation is not a new issue in Malaysia and already has been practiced in medical field to saved life of people but it got less awareness and attention among society. The history of organ transplant in Malaysia had started in 1960 when first cornea transplant was implemented and in 2010 when the first organ donation awareness week was organized. (The Transplant Service Unit and National Transplant Centre Resources, 2014). The first successful human organ transplant in the history of organ donation in the world was a kidney transplant performed in 1954. The kidney was transplanted from Ronald Herrick into his identical twin performed by Dr. Joseph Murray and Dr. David Hume at Brigham Hospital in Boston.

Organ donation is a process of transferring organs and tissues to patients that held end-stage organ failure from living or deceased donor. (The Transplant Service Unit and National Transplant Centre Resources, 2014). Therefore, organ donation has been linked to organ transplant as the existence of pledger can help to save others' life. Meanwhile, "Organ transplantation is the transfer of human cells, tissues or organs from a donor to a recipient with the aim of restoring functions in the body". (World Health Organization, 2014).

According to Transplantation Unit Medical Development Division, Ministry of Health Malaysia (2011), there are two types of organ donation which is a living organ donation and a deceased organ donation. On living organ donation, only part of the liver and the two kidneys that can be donated. It can be classified into two living related and non-related living. There are two types of death which is "brain dead" and "died after the heart stops." Organ and tissue donation can be made to the donors who experienced "brain dead" while donors who have "died after a heart-stopping" can just donate only their tissues.

The statistic of Organ and Tissue Donor number in Malaysia (2000-2014) shows a very low number of organ donors.

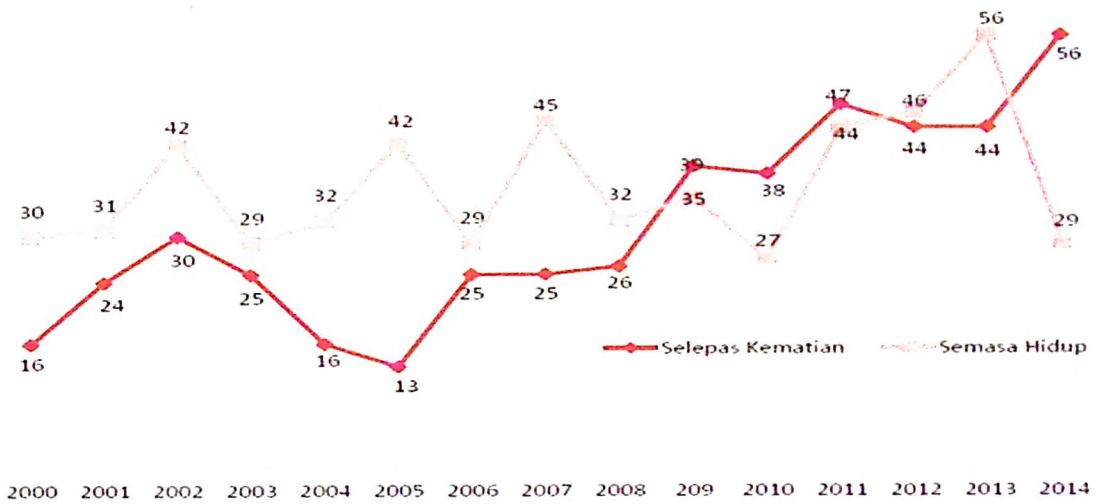


Figure 1.1: Organ and Tissue Donor Number in Malaysia (2000-2014)

In addition, according to World Health Organization (WHO) organ donation rate in Malaysia is only 0.68 per million population.

Table 1.1: Organ Donation Rate by Countries.

Country	Rate of Organ Donation (per million population)
Spain	34.35
America	25.49
United Kingdom	15.07
Australia	11.33
Singapore	5.00
Arab Saudi	2.65
Thailand	1.28
Malaysia	0.68
Myanmar	0.02

The lower rate of organ donor has made the patient who had waiting for organ worried. This situation need to be changed with the increased of organ donors. Below is the list of total patient who had waiting for organ in national waiting list.

Table 2.1: Total of Patient has Waiting Organ in National Waiting List

Type of Organ	Total of patient	
Kidneys	18,661	
Liver	Childrens: 3	Adults: 4
Heart	6	
Lungs	6	
Heart and Lungs	2	
Total	18,675	

Therefore, the government through National Transplant Centre Resources had taken various measures to raise the number of organ donation pledger and the awareness about organ donation in order to tackle the growing number of patients suffering from organ failure every year.

Meanwhile, Malaysia has been practicing an opting in system especially the donor deceased case. It is also called as brain death in which the organ was donated from the patient at intensive care unit for any reasons (Cetin et al, 2014). This system gives freedom to others people whether to agree to be a donor or not (Sque & Payne, 2007). This system also means the organ of pledger who died can only be move out after obtaining the approval from the donor's family members. The organs that can be donated are kidneys, heart, lungs and tissues such as cornea, skin, heart valve and bones (Transplantation Unit Medical Development Division, Ministry of Health Malaysia, 2011).

Based on the problems, there is a need to increase organ donation through improvement of knowledge about organ donation and transplantation especially among health professionals. This can lead to the willingness to be one of the organ donation pledger or donor. According to this study, the level of knowledge for medical and nursing student should be determined as it relates to their willingness to be an organ donor. So the solution such as established campaign about organ donation can be organized in the campus to raise awareness among students.

This study is very important to be reviewed and emphasized to bring awareness to health professionals in order to improve people's knowledge about organ donation and to encourage them to be willing to be an organ donor. Furthermore, these health professionals may be involved with organ transplant in the future as a health practitioner. It is also important to address the increasing number of patients suffering from organ failure every year and to be able to save someone's life more quickly without having to wait for a long time for the organ. This matter needs to be improved by health care professionals especially by medical and nursing students because they are the future health practitioners who are responsible to identify potential donor and promoting organ donation.

1.2 Problem Statements

First problem was identified is lack of knowledge and willingness on organ donation. It is related to current study by Makmor et al (2014) indicates that the main causes to low organ donation rate in the country is insufficient information on organ donation and influences the awareness of people to acceptance towards organ donation. In the previous study by Zhang et al (2007) claim that most of students were willing to donate organ even though they were far from adequate social education and advertisement about organ donation. The point here is that the level of knowledge has an influence to the students who want to donate organ. Other result studied by Ali et al (2013) shows that there is lack of knowledge among both first and fourth year students but they already have the awareness on organ donation issue. The previous study by Figueora et al (2013) shows that the rising level of knowledge on organ donation has been related to willingness of medical students to register as a donor. So that, the point to express here, is that there is a correlation between the level of students' knowledge and willingness to donate organs. This study has been done to identify the association between knowledge and willingness of students regarding organ donation.

Second problem identified was the attitude of health professional itself in organ donation issue. In the previous study done by Melo et al (2011) has claim that nursing students were fully aware of the roles and responsibilities of nurses to augment organ donation and transplantation and as the future health professionals. In previous study done by Symvoulakis et al (2012) claimed that half respondents are not willing to donate organ after death because they believed that an intact body was needed after

death. So that, the point that wants to be highlight here, is the attitude of health professionals may have an influence in the organ donation and transplant. This study purpose is to identify the relation between attitude of health professionals and organ donation and transplantations.

Third problem was identified is organ shortage. It is based on research done by Makmor et al (2014) claims that the major concern in many countries is organ shortage. In the previous study which has claimed that the health professionals have high level of awareness in organ donation but the tissue donation is still much lower (Sque & Payne, 2007 cited in Odell et al, 1998). In other previous study done by Makmor et al (2014) has claimed that the main cause of low organ donation rate and organ shortage in Malaysia may be caused by the lack of effective public education on organ donation. This situation in Malaysia where the total patient who is waiting for organ transplant keep increasing year by year and has been recorded that there are more than 18,000 patients. (The Transplant Services Unit and National Transplant Centre Resources, 2014). This condition is extremely alarming because the number of patient population who are waiting for organ transplant is high compared to organ donation. In other situation such as in the United States, 131,654 patients were waiting for organ transplant and many patients have died while on the waitlist (Kuddus et al, 2014). So that, the point to highlight here is the education or information has an influence in the organ shortage. This study is done to know the association between level of education and organ shortage.

The last problem was identified in organ donation issue is the refusal from family members. In previous study result done by Sque & Payne (2007) were claim that a decision to decline donation are related to dissatisfaction with the care provided to the deceased and or the family religious, personal and cultural beliefs, lack of trust in the health care professionals in which they will not strive to save the person who have agreed to be an organ donor. In other previous study by Mossialos (2008) claims that the individual is likely to donate organ related on his or her understanding about organ donation policy and good communication will has an influence in individual willingness to donate organ. So that, the point to be stated here is that there is no relation between the person willingness to donate organ and refusal from family members to give organ after someone death.

1.3 Research Objectives

1.3.1 General Objective

To explore the level of knowledge and willingness of medical and nursing students regarding organ donation.

1.3.2 Specific Objectives

1. To determine the level of knowledge and willingness of medical and nursing students regarding organ donation.
2. To identify the correlation between knowledge and willingness of medical and nursing students regarding organ donation.
3. To differentiate the knowledge between medical and nursing students regarding organ donation.
4. To differentiate the willingness between medical and nursing students regarding organ donation.

1.4 Research Question

1. What is the level of knowledge and willingness of medical and nursing students regarding organ donation?
2. Is there any correlation between knowledge and willingness among medical and nursing students regarding organ donation?
3. Is there any difference in the knowledge between medical and nursing student regarding organ donation?
4. Is there any difference in the willingness between medical and nursing student regarding organ donation?

1.5 Research Hypothesis

1. H_O: There is no significant difference in knowledge regarding organ donation among medical and nursing students.

H_A: There is a significant difference in knowledge regarding organ donation among medical and nursing students.

2. H_O: There is no significant difference of willingness regarding organ donation among medical and nursing students.

H_A: There is a significant difference of willingness regarding donation among medical and nursing students.

1.6 Definition of Terms (Operational)

1.6.1 Knowledge on Organ Donation

Knowledge is facts, information and skill required through experience or education, the theoretical or practical understanding of a subject (Oxford Dictionary, 2014). In terms of the knowledge on organ donation among students, it involves the knowledge about organ donation itself that include the knowledge to know about the organ that can be donated like heart, liver, eyes and others. In addition, student should know about the type of organ donation and the system that applied in Malaysia.

1.6.2 Willingness on Organ Donation

Willingness is learned about influence of religion on attitude towards organ donation, allowance for organ donation incentive, and factors influencing choice of recipient for future donation (Dra et al, 2009). In terms of the willingness of students regarding organ donation included the willingness of the students to donate organ to others people especially for their own family. The willingness of students to donate organ are evaluated from result of their level of knowledge which influenced their willing to donor.

1.6.3 Organ Donation

Organ donation is for medical purposes after ending of someone life medically, certifies and validates it on one's own volition by someone being alive allows other people to use his or her tissue and organs (Cetin, 2013). In this study on organ donation were focused on the questionnaire about organ that can be donated and legal regarding organ donation.

1.6.4 Medical Students

Medical students is a person following a course of study leading to qualification as a doctor of medicine (Collinsdictionary.com, 2015). In this study medical student include is fifth year students were from 96 of students in Pusat Pengajian Sains Perubatan (PPSK), USM.

1.6.5 Nursing Students

Nursing students is a someone who is studying or training to be a nurse (collinsdictionary.com, 2015). In this study, nursing student involve is third and fourth year students were from 73 of students in Pusat Pengajian Sains Kesihatan (PPSK), USM.

1.7 Significance of The Study

The findings of this result will describe the level of knowledge and willingness of medical and nursing students regarding organ donation. The results will be used to help medical and nursing students to increase the readiness of organ donation pledger. The results of this study will also show the association of knowledge and willingness between medical and nursing students. It is important for both courses to take responsibilities on organ donation issue because they are the future health practitioner who were responsible to take vital step to identify potential donor and to encourage the public to donate their organ in order to help other needy people. The result can also show the willingness on organ donation issue among students because they may be involved in organ transplant procedure as a health professional. The students should use the results of this study as a source of information to develop knowledge and willingness for public to be a pledger of organ donor. This is important to their future.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter consisted of knowledge and willingness among medical and nursing students towards organ donation and relationship between others. The areas covered are in the following sequences:

1. Knowledge of students regarding organ donation
2. Willingness of students regarding organ donation
3. Knowledge and willingness regarding organ donation among medical and nursing students

2.2 Review of Literature

2.2.1 Knowledge of Students Regarding Organ Donation

The previous study in Turkey is High School Students' Knowledge and Attitudes of Organ Donation and Organ Transplantation on 2013, is important to know the level of knowledge and attitude of organ donation and transplant among high school students. The author has shown about the raising level of knowledge can increase organ donation even though they have lack of information about organ donation and organ transplant in general. In this research, the increases of knowledge level among students can increase the level of willingness to donate organ among students.

In this study, the author used the school students as sample size. In terms of this research, the researcher has used the university students as sample size namely medical and nursing students. It is much better because they are from health sciences field and have more understanding about organ donation and transplant information. This study has used the term "attitude" that was used by author to know the scale of attitude among

students towards organ donation while the researcher has used the terms of willingness to know the willingness of students to donate organ and show more specific regarding organ donation. The researcher use the open ended questions and two instruments in this study to measure the attitude scale have 10 questions and organ donation knowledge have 5 questions (Çetin et al, 2014).In this study, the students in both schools have not enough information about organ donation and transplantation but these things have proved that the positive attitudes had been shown by half of the students towards organ donation and transplantation. The students get information and the positive attitudes towards organ donation from the social media that has shown good news about organ donation. It been shown that the level of knowledge and attitude or willingness towards organ donation among students not associated with each other.

The different in other study on organ donation issues is done by Zhang et al (2007), this study are different from the researcher study which has stated that most of the students are willing to participate in organ donation even though they are far from social education and advertisement on organ donation. This matter does not influence their decision to be a donor. This shows that there is no association between the level of knowledge and willingness to donate organ. The level of knowledge and willingness need to be increased regarding organ donation. This study aim is to change the attitude toward living organ donation. In this study, the author used three university students as sample size. In terms of this research, the researcher used the university students as well as sample size namely medical and nursing students. This research used questionnaire designed which is the same as the researcher study. This previous study did not fully accomplish the researcher study because of lack of knowledge of students regarding organ donation issue. It can influence in the decreased of willingness of students to donate organ. The attractive information from Zhang et al (2007) study stated that without adequate information the willingness of students to donate organ can still increase.

According to the previous study, knowledge is usually assess to evaluate understanding of respondents towards the definition of organ donation, awareness of donation by living people and deceased, risks in organ donation and source of information (Dra et al, 2009). According to the previous study, the explanation about the willingness is learned as well as influence of religion on attitude towards organ donation, allowance for incentive based organ donation, and factors influencing choice

of recipient for future donation. Educate people with new and current information with help from media, doctors and religious scholars can ultimately translate knowledge into the act of donation (Dra et al, 2009).

2.2.2 Willingness of Students Towards Organ Donation

In the previous study about the willingness towards deceased organ donation among University Students in Saudi Arabia, it is important as the author assesses the willingness to donate organ and tissue among university students as the future health professionals. This study has the same stand with the researcher study which has claimed that majority of students were willing to donate organs. This study shows positive willingness among students to donate organ. It is because of their higher level in knowledge. It is suitable with the researcher study which wants to increase the willingness to donate organ by increasing knowledge. The researcher used questionnaire as an instrument to measure the willingness of students regarding deceased organ donation. The result indicates that the students which have more information about organ donation wants or willing to donate organ and tissues than among students with lack of knowledge about this. This has shown the association between the knowledge and willingness towards organ donation. In addition, lack of information, personal attitudes and religious belief are the causes of rejections towards organ donation and tissues among students (Al-Ghanim, 2009).

In other previous study done by Demir & Kumkale (2013) is “Individual differences in willingness and organ donor: A decision tree approach to reasoned action is important to promote organ donation and willingness to donate. It depends on the intention of someone to be a donor and with regards to their personality and attitude. This study aim is to find the different of individual opinion to donate organ. This study has different stand with the researcher study because the different individual willingness to donate organ in this field is different and not the same as the researcher study. In terms of methodology, the author used the internet user to answer the questionnaires. It indicates that the willingness of student to donate organ is positive. The previous study is different from the researcher study by the use of the internet user as a method to collect data but this method may have errors occurred. The researcher need to choose a better usage of questionnaire method for this study.

2.2.3 Knowledge and Willingness Towards Organ Donation among Medical and Nursing Students

According to the study of medical students' knowledge and attitudes towards organ donation: Results of a Dutch Survey, the aim for this study is to examine which factors determine the medical students' willingness to register as donors. This study use the instrument of questionnaire that have 15 items included in the questions on actual donor registration, motives, knowledge, and attitudes toward donation (Figueroa et al, 2013). The study population consisted of students from the years 1 until 3 of medical school that which have 152 students (30.0%) were enrolled in the first year, 190 (37.9%) in the second year and 162 (32.1%) in the third. Next, among of all the students, 59% was registered as an organ donor in the Dutch Donor Register . This study suggests that the rising level of knowledge in organ donation up to some minima level and it can leads to the increase in willingness to register as a donor. The increasing medical knowledge by study year was associated with the changing of attitude among medical students.

The researcher used the sample of full time nursing students of undergraduate and master programs in a university at Hong Kong with distributions of questionnaire in the previous study of knowledge, attitudes and commitment towards organ donation among nursing students in Hong Kong in 2012. The present study shows that around 40% from 23 % among medical students at five years ago had registered for organ donation. This show the increase in register as a donor among medical students. If we want to improve the attitude of students toward organ donation they should be provided with the educational or promotional materials (Tam et al, 2012). The rising level of knowledge in organ donation up to some minimal level increased the willingness to register as a donor (Figueroa et al, 2013).

In the others previous study of Can education alter attitudes, behavior and knowledge about organ donation? A pretest–post-test study explain that their ability to discuss organ donation intentions with their family are related to short programme about organ donation was conducted that can give knowledge about organ donation among students nurses are effectively improved.

2.3 Theoretical Framework

In this study, the researcher was decided to choose apply the Theory of Reasoned Action (TRA) to explain about the willingness to become a donor. The theoretical framework in this study is based on the Theory of Reasoned Action (TRA) by Ajzen and Fishbein (1980). In this theory, it is explain about voluntary control of human behavior. The people usually have rationale and make predictable decision to intention that can lead to the determinant of behavior and others factor can influence behavioral intention. (Theory in a Nutshell, 2002).

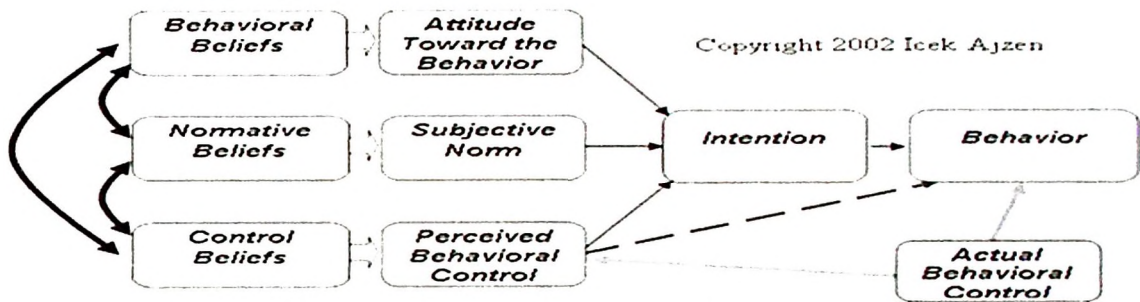


Figure 2.1 Theory of Reasoned Action (Ajzen & Fishbein, 1980)

The figure 2.1 show about the method of behavioral intentions that influenced by attitudes to subjective norms and behavior. The beliefs will be determinants of attitude and desired outcome will be get if behavior are doing and give the benefit to health. The subjective norms related to a person's belief about people thinking. It also called as normative beliefs. It also involve individual's motivation to comply with those other people's wishes. The social influences related to level of individual values social approval by a particular group. Apart from that, the attitudes and social norms jointly determine to intention to act. In addition, Ajzen and Fishbein (1980) was added the perceived behavioural control as a third influence on behavioural intentions.

2.3.1 Conceptual Framework

CORRELATION

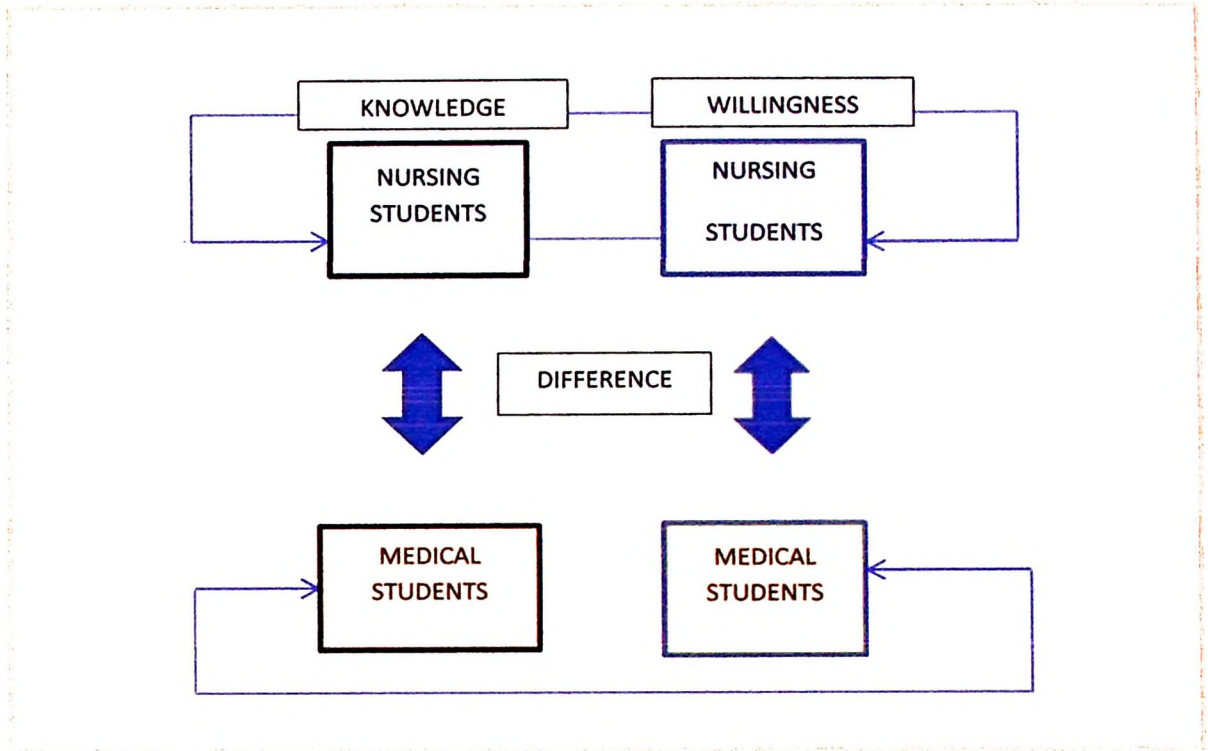


Figure 3.1 : Conceptual Framework of The Differential Relationship between Knowledge on Organ Donation and Willingness to Donate Organ

From the Ajzen and Fishbein (1980), the researcher modifies and adopts a conceptual framework (Figure) which recognizes the differentiates of knowledge and willingness between medical and nursing students to donate organ. This theory explained about comparison knowledge level between medical and nursing students. This comparison can see when they answering the questionnaire about knowledge about organ donation. Second, the researcher wants to know about the level of willingness towards organ donation between medical and nursing students. The researcher wants to know about the two sample that which high level of willing to donate organ. Third, the researcher wants to know about difference between medical and nursing students towards organ donation. It is because this difference will be to determine the behaviour of sample to organ donation either accepting or rejected to donate organ. In addition, it also influences to sample have intention to donate organ if they accept this matter and vice versa. Finally, the respondents can make decision to donate organ.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Research Design

In this study, the researcher will be using of quantitative and comparative cross-sectional study because it used to study time-related phenomena and appropriate for describing phenomena at a fixed point (Polit & Beck, 2013). It is for determine knowledge and willingness of medical and nursing students in Universiti Sains Malaysia (USM) towards organ donation. The data will be collected from December 2014 until February 2015.

3.2 Population and setting

The target population are medical and nursing students at USM. The medical students that will be included in the study were from fifth years while nursing students are from third and fourth years. The researcher was used the medical and nursing students because they are already learnt about organ donation and transplantation in syllabus and elective subject in university and from previous study has used sample from medical and nursing students. In addition, the final year students should be ready to enter the health professional career with knowledgeable and ready to work with confidently.

3.3 Sample

3.3.1 Sampling Size

In this study, the researcher used power and sample size program in determining the specific sample size. The sample size of this study was estimated:

Table 3.1: Sample Size Determination

α	0.05
Power	0.8
P_0	0.4
P_1	0.6
m	1

Based on these criteria, the sample for this study was 87 for each group. That was means medical and nursing students. The total of medical and nursing students were following:

Medical Students :

= 87 + drop out 10%

= 87 + 9

= 97 respondents

Nursing Students:

= 87 + drop out 10%

= 87 + 9

=97 respondents

Based on sample, the medical students were collected followed sample calculated and nursing students of sample collected were 97 students but it was moderate sample size because the sample just have 73 nursing students.

3.3.2 Sampling Design

The knowledge and willingness towards organ donation among medical and nursing students in school of health sciences, USM is select based on the inclusion and exclusion criteria. In this study the researcher will be used non-probability sampling method with convenience sampling, therefore, bias will be avoided the time when the study is conduct. The bias were avoid by controlling and assessing the respondents of the survey sample during fill in the questionnaire after they were finished class.

3.3.3 Inclusion and Exclusion Criteria

Inclusion Criteria

1. The medical students in fifth year.
2. The nursing students in third and fourth year.

Exclusion Criteria

1. Non - Medical and Nursing Students from School of Health Sciences, USM.
2. Medical (Other than fifth year) and Nursing Students (Other than third and Fourth year).

3.4 Instrumentation

3.4.1 Instrument

The questionnaire is adapted from journal with consent of author and will be used in order to gather information on identify knowledge and willingness of medical and nursing Universiti Sains Malaysia undergraduates students towards organ donation. This questionnaire consists of three parts.

Part 1 consisted of socio-demographic data, Part 2 consisted of knowledge of students towards organ donation and part 3 consisted of willingness of students towards organ donation.

Part 1 consisted of 6 items that identify the courses of students, gender, age, race, religion and marital status. This information provides background about the students. The age will be filled by respondents and depend on the year of birth. For the gender, the students will be choice either male or female. For the race, respondents can be choose either Malay, Chinese, India or Others race. For the religion, the respondents can choose either Islam, Buddha, Hindu, Christian or others. For the marital status, respondents will be choice either married or unmarried.

Part 2 consists of three parts and includes of 15 questions namely a, b and c:

- a) Understanding about organ donation
- b) Agreement regarding organ donation
- c) Participation in organ donation

The researcher adopted the questionnaire from Symvoulakis et al (2012).

Part 3 is related to willingness of students towards organ donation (10 items) and respondents need to choose one answer. The researcher adopted the questionnaire from Kuddus et al (2014) and Cetin et al (2013).

3.4.2 Variables Measurement

The independent variables are select based on the socio-demographic data. The demographic data include courses, gender, age, race, religion and marital status.

The dependent variable the item of Questionnaire of knowledge towards organ donation scale will rate using dichotomous scale namely include of “yes” ,“no” ,the total of item is 15 items. Meanwhile, each item was rated using a five-point Likert type scale ranging from “1” (Strongly Disagree), “2”(Disagreeing), “3” (not sure), “4” (agreeing), “5” (strongly agreeing) to examine willingness of students towards organ donation.

3.4.3 Variables scoring

The questionnaire that adopted from author was given scoring. After the questionnaire is completed to answer, the each item will be analyzed through summed of score for a group of items. For knowledge questionnaire, the total score for knowledge is 15 with the scoring of 8 and less as low knowledge and above 8 as high knowledge. Whereas, the total score for willingness is 50 with the scoring of 25 and below as low willingness and 25 and above as high willingness.

3.4.4 Translation of Instrument

The instrument use in this study is in English Language for easy to understand by the respondents during fill form. In addition, this questionnaire are originally adopted from three author. Finally, the instrument will be distributed to three content experts. If all of three content experts agree, the instrument in new version will be remain. If two content expert agree, the new version of instrument will be taken too. If none content expert agree, the instrument will be do again.

3.4.5 Validity and Reliability

In order to make sure the respondents are treats ethically, the validity and reliability are important in the data collection instrument. The questionnaire will be validated by three content experts. Then, the pilot study will be test to ensure the reliability. This aim of pilot study is to test the Cronbach's alpha in each of the item that use in instrument. The pilot study is important to know that the questionnaire is easy to understand and answer. The pilot study test will be tested 16 of sample of students as a respondents. The Cronbach's alpha was 0.7 for knowledge and 0.86 is for willingness questionnaires.

3.5 Ethical Consideration

In order to protect the rights of human subjects and also to achieve basic principles of the ethical concerns, this is include :

1. Permission from Ethical Committee University of Science Malaysia will be requested and obtained.
2. The research will be conducted in the campus, USM after obtaining permission from Dean of School of Medical Sciences and Dean of School of Health Sciences, University Sains Malaysia (USM).
3. The researcher will explain the purpose of the study to eligible respondents. The respondents who were willing to participate in the study will give oral consent. They will receive further explanation about this study.
4. The researcher will use the coding system to identify the subject. Researcher must inform the respondents about the researcher identity with sincerely before get permission from them to participate in the research. They will be anonymity for all information given and the use of such information will be purpose of this study only. The researcher must keep all the information given by the respondents as a secret. The respondents is explained that their identify is remaining confidential.

3.6 Data Collection Method

After approval from the Research Ethical Committee (Human), USM, and permission for data collection is permit from the Dean of School of Medical Sciences and Dean of School of Health Sciences patient are approach. Written consent were sought from respondents who fulfill the inclusion criteria and are willing to take part in the study. After obtaining consents, respondents are brief and given questionnaires to be filled up the questionnaires are collect after 10 minutes so that they had adequate time to complete the questionnaire after class. Data collections are carry out from December 2014 until February 2015.

3.6.1 Flow Chart of Data Collection

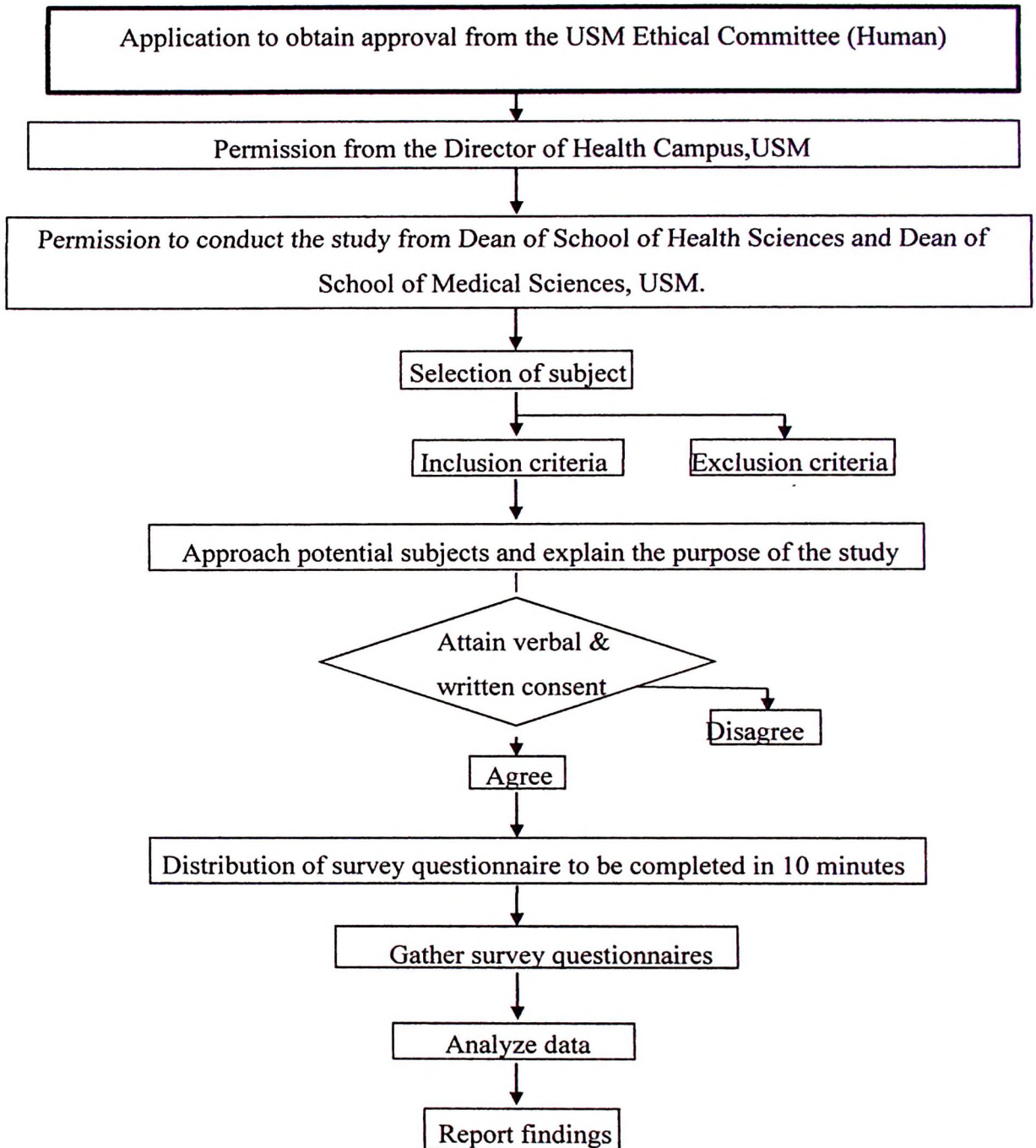


Figure 3.1: Flow Chart of Data Collection

3.7 Data Analysis

Data gather are process by using Statistical Package for Social Science (SPSS) Software, version 22.0 for windows were used to analyses the data including descriptive and statistical tests as follows :

Socio-demographic Data

The descriptive statistics were used for presentation of demographic data of the respondents which contain of mean, standard deviation, and frequency.

The knowledge and willingness towards organ donation among medical and nursing students of Campus Health Sciences, USM.

The researcher were used of descriptive statistics to determine the level of knowledge and willingness towards Organ Donation.

The correlation between knowledge and willingness towards organ donation among medical and nursing students of Campus Health Sciences, USM.

The researcher were used of spearman Rho to identify the relation between knowledge and willingness of medical students and nursing students towards organ donation.

The compare of willingness between medical and nursing students towards organ donation.

The researcher were used of Mann-Whitney test to compare of willingness between medical and nursing students towards organ donation.

- At the 5% level of significance , all null hypothesis will be rejected if $p < 0.05$

CHAPTER 4

RESULTS

4.1 Introduction

All 169 respondents had been given questionnaires during data collection. All the inclusion criteria were fulfilled. The response rate achieved in this study was 100% from the respondents of 73 Nursing Students and 96 medical students. The following sections present the results systematically according to the findings as reflected in the questionnaire.

4.2. Sociodemographic characteristics of Respondents.

Table 4 below shows the mean, standard deviation, frequency and percentage of sociodemographic characteristics of respondents. There were 96 (56.8%) medical students and 73 (43.2%) nursing students who are participated in this study. The students age ranged from 20 to 40 years ($M = 23.87$, $SD = 1.77$). From total number of 169 respondents, 38 (22.5%) were male and 131(77.5%) were female. In terms of races, 118(69.8%) were malay, 39 (23.1%) were chinese, 9 (5.3%) were India and others 3 (1.8%). Most of the respondents religion in this study was Islam 118 (69.8%), followed by non-muslim, 27 (16%) were Christian, (5.3%) were Buddha, (8.9%) were Hindu. In terms of marital status, 9 (5.3%) were single and 160 (94.7%) were married.