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Bridging the Gap in Organ Donation: A Comprehensive Analysis of Knowledge, Attitude, and Willingness among Undergraduate Nursing Students at IIUM Kuantan, Malaysia

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ABSTRACT

Organ donation involves transferring healthy organs to those in need, and nursing students, as future healthcare providers, are key to public education on this topic. Despite the critical demand for organs, donor shortages persist globally due to public misconceptions. Nursing students' knowledge, attitudes, and willingness are pivotal, yet limited research explores these factors in the Malaysian context. To assess knowledge, attitudes, and willingness toward organ donation among IIUM Kuantan undergraduate nursing students. A quantitative cross-sectional survey was conducted at the Kulliyah of Nursing, IIUM Kuantan, using an online questionnaire. Data on demographics, knowledge, attitude, and willingness were analyzed using descriptive statistics, Independent T-tests, and One-way ANOVA. Among 227 respondents, over 50% had fair knowledge of organ donation, 91.6% had positive attitudes, and 64.3% expressed high willingness. Year of study was not significantly associated with knowledge, attitude, or willingness ($p > 0.05$). Gender was significantly associated with willingness ($p = 0.001$) but not with knowledge or attitude ($p > 0.05$). Enhancing nursing students' knowledge, attitudes, and willingness toward organ donation is crucial for addressing global donor shortages and saving lives.

1. Introduction

Organ donation involves making an organ or parts of it available for transplantation to another person, either during the donor's lifetime or after death [1]. Organs such as the liver, kidney, and heart can be donated. World Organ Donation Day, celebrated annually on August 13th, aims to raise public awareness about organ donation. Despite this, the number of registered organ donors remains low globally, while the number of patients in need of transplants continues to rise. A previous study found that more awareness campaigns are necessary to address public misconceptions about organ donation, which contribute to reluctance in becoming donors [2].

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Deciding to donate organs is one of the most significant choices a person or family member can make. Understanding the factors that influence attitudes toward organ donation can help address the persistent organ shortages and explain why individuals choose to donate or not. While anyone can be a donor, children under 18 require parental or legal guardian consent, aligning with The Law Reform (Marriage & Divorce) Act 1976, which states that parents are responsible for children under 18 [3-5]. Organ donation is also regarded as a noble act. The Quranic verse 5:32 emphasizes the importance of saving lives, highlighting a Muslim's duty to assist those in need. However, there are debates regarding organ donation in Islam. From Islamic perspectives, a study had been discussed to inform Muslims adequately regarding fatwa. Some argue that organ donation violates God's autonomy over the human body, and others contend that donating organs from brain-dead individuals, who are still mechanically alive, equates to killing [6].

Dispelling these arguments is crucial to meet the global demand for organ donors. Increasing knowledge and fostering a positive attitude towards organ donation are believed to help address the organ shortage by encouraging public participation. Therefore, this study aims to explore the knowledge, attitudes, and willingness regarding organ donation among undergraduate nursing students at the International Islamic University Malaysia.

Despite the critical role nurses play in promoting health awareness, including organ donation advocacy, limited research has explored the perspectives of nursing students in Malaysia, a group poised to influence future public health campaigns. While several studies have examined organ donation attitudes among university students in Oman, Pakistan, and India [10,21,22], the focus has predominantly been on general student populations rather than those in healthcare-related fields. Notably, Sadiq and Shams [10] underscored the pivotal role of education in shaping students' organ donation attitudes, but their research did not address nursing students, whose unique experiences and responsibilities may lead to different perspectives.

Furthermore, existing studies, such as those by Poreddi *et al.*, [21] and Chakradhar *et al.*, [22], have primarily targeted students outside Malaysia, leaving a significant gap in understanding local cultural, religious, and educational influences on organ donation attitudes. Although Haque *et al.*, [7] offered insights into Malaysian students' general awareness of organ donation, the study lacked specificity concerning nursing students, who are more likely to interact with patients and the public regarding this sensitive issue.

Additionally, the rapidly evolving healthcare landscape underscores the need for updated data that considers contemporary challenges and opportunities for promoting organ donation awareness among nursing students. By addressing this gap, the present study seeks to provide nuanced insights into nursing students' attitudes and knowledge in Malaysia, thereby offering valuable recommendations for targeted educational interventions and public health strategies.

2. Methodology

2.1 Study Design

A cross-sectional study was conducted among undergraduate nursing students at IIUM Kuantan, as this method is the most suitable for quantitative research conducted over short periods. The design effectively explored the knowledge, attitudes, and willingness regarding organ donation among these students. Participants were selected based on inclusion criteria (undergraduate nursing students from IIUM Kuantan who are Malaysian) and exclusion criteria (students on study leave or those not interested in participating). The study sample was drawn from the undergraduate nursing students in the Kulliyyah of Nursing at IIUM Kuantan, with a total population size of 553. The Raosoft Sample Size Calculator was used to determine the sample size, considering a margin of error of 5%,

a confidence level of 95%, and an estimated response rate of 50%. The final calculated sample size for this study was 227.

2.2 Measurements

The levels of knowledge, attitude, and willingness towards organ donation among undergraduate nursing students at IIUM Kuantan were assessed based on the percentage of the total score for each variable. These scores were calculated in accordance with established guidelines. For each dependent variable (knowledge, attitude, and willingness), the total score was determined. For knowledge and attitude, responses were recorded as binary choices, where participants selected either "yes" or "no." In contrast, willingness was measured using a ternary response format, allowing participants to choose "yes," "no," or "uncertain."

The knowledge assessment consisted of 13 questions, with scores ranging from a minimum of 3 to a maximum of 13. Respondents achieving at least 75%, with a minimum score of 10, were classified as having good knowledge. The attitude assessment comprised nine questions, with scores ranging from a minimum of 2 to a maximum of 9. Participants who scored at least 50% were considered to have a positive attitude towards organ donation.

Finally, the willingness to donate organs was evaluated using four questions, with scores ranging from 0 to 4. Respondents who achieved at least 50% were deemed to have a high willingness to donate their organs.

2.3 Variables

The independent variable for this study was the year of study and gender of the respondents, while the dependent variable was the level of knowledge, attitude, and willingness towards organ donation among undergraduates nursing students in IIUM Kuantan.

2.4 Ethical Considerations

Ethical approval for this research was granted by the Kulliyah of Nursing Postgraduate Research Committee (KNPGRC) and the International Islamic University Malaysia Research Ethics Committee (IREC). The application was submitted online. The questionnaires were then distributed to participants who consented to take part in the study. The questionnaires were created using Google Forms and included a consent form, ensuring voluntary participation without coercion. All data collected will remain confidential and will be used solely for academic purposes. Furthermore, the data will be securely stored on a password-protected computer accessible only to the researcher. Upon completion of the study, the data will be erased from the computer after being copied onto CDs for safekeeping.

2.5 Participant Recruitment and Data Collection

The researcher selected participants based on the required respondent size and the inclusion and exclusion criteria. The questionnaire was personally distributed to potential respondents by the researcher. Those who agreed to participate were provided with a questionnaire, which included a consent form on the first page, requiring their agreement as confirmation of consent. The researcher reviewed the submitted forms to ensure all questions were answered. Incomplete questionnaires were automatically excluded from the data analysis.

2.6 Data Analysis

The data were analysed using SPSS version 27. Descriptive statistics are presented as proportions for categorical variables. The normality of the data was assessed using the Kolmogorov-Smirnov and Shapiro-Wilk tests. The results indicated that the p-value was less than 0.05, suggesting the data were not normally distributed. Consequently, the relationship between the year of study and gender with knowledge, attitude, and willingness was examined using the Independent T-test and One-Way ANOVA, with statistical significance determined at p-value < 0.05.

3. Results

Of the 227 respondents, all completed the study questionnaires, yielding a response rate of 100%. Table 1 presents the demographic data of the respondents. The majority were female (71.4%), while only 28.6% were male.

Table 1
Demographic data of the respondents

Variable	Frequency (n)	Percentage (%)	Means (SD)	
Age (years)				
19	2	0.9	21.88 (2.35)	
20	50	22.0		
21	53	23.3		
22	41	18.1		
23	63	27.8		
24	14	6.2		
25	2	0.9		
26	2	0.9		
Gender				
Male	65	28.6		1.71 (0.45)
Female	162	71.4		
Year of study				
Year 1	73	32.2	2.42 (1.20)	
Year 2	48	21.1		
Year 3	43	18.9		
Year 4	63	27.8		

Table 2 presents the levels of knowledge, attitude, and willingness towards organ donation among undergraduate nursing students at IIUM Kuantan. The results indicate that over 50% of the students possessed a fair level of knowledge about organ donation. Additionally, 91.6% demonstrated a positive attitude towards organ donation. Furthermore, approximately 64.3% showed a high willingness to donate organs. Overall, the majority of undergraduate nursing students at IIUM Kuantan exhibited fair knowledge, positive attitudes, and proactive practices regarding organ donation.

Table 2

Descriptive findings for level of knowledge, attitude and willingness towards organ donation among undergraduate nursing students (n=227)

Variable	Frequency (n)	Percentage (%)
Level of Knowledge		
Poor	14	6.2
Fair	118	52.0
Good	95	41.9
Level of Attitude		
Negative	19	8.4
Positive	208	91.6
Level of Willingness		
Poor	81	35.7
High	146	64.3

Based on Table 3, the majority of respondents demonstrated good knowledge of organ donation. This is evident as 97.8% and 93.8% answered correctly when asked about the terms "organ donation" and "transplantation," respectively. In the 13-question questionnaire, questions 6, 9, and 10 were assessed using a reverse scoring method. For these items, a response of "No" (originally scored as 0) was scored as 1, while a response of "Yes" (originally scored as 1) was scored as 0. Notably, only 49.8% of respondents answered question 6 correctly, indicating that they understood a certified brain-dead registered organ donor is not immediately removed from ventilation support. Overall, most respondents demonstrated fair knowledge of organ donation, as shown in Table 3.

Table 3

The level of knowledge on organ donation among undergraduate nursing students in IIUM Kuantan

Variable	Answer	Frequency (n)	Percentage (%)	Correct answer (%)	Wrong answer (%)
Have you heard the term organ donation?	Yes	222	97.8	97.8	2.2
	No	5	2.2		
Have you heard the term organ transplantation?	Yes	213	93.8	93.8	6.2
	No	14	6.2		
Are you aware of the transplantation of human organs act?	Yes	181	79.7	79.7	30.3
	No	46	20.3		
Do you know where to obtain organ donation cards?	Yes	114	50.2	50.2	49.8
	No	113	49.8		
Can a brain-dead patient's organ be donated?	Yes	181	79.7	79.7	19.8
	No	45	19.8		
Will a certified brain-dead, registered organ donor be immediately disconnected from ventilation support?	Yes	114	50.2	49.8	50.2
	No	113	49.8		
Can parents or guardians make substitute decision making for mentally disabled persons in the regard of organ donation?	Yes	157	69.2	69.2	30.8
	No	70	30.8		
Donor's and recipient's blood group must be matched?	Yes	214	94.3	94.3	5.7
	No	13	5.7		
	Yes	41	18.1		

Donor's human leukocytes antigen must be identical to that of the recipient for any organ transplantation?	No	186	81.9		
Hepatitis B and C carriers can donate all of their solid organs except the liver organs?	Yes	110	48.5	51.5	48.5
Malignancy is always a contraindication to cadaveric organ donation?	No	117	51.5		
Increased risk of opportunistic infections is a common complication to all transplantation?	Yes	179	78.9	78.9	21.1
Organ transplant recipients are more prone to developing of cancer after transplantation?	No	48	21.1		
	Yes	206	90.7	90.7	9.3
	No	21	9.3		
	Yes	134	59.0	59.0	41.0
	No	93	41.0		

Table 4 shows the level of attitude was classified into two categories: positive and negative. Questions 7 and 8 were assessed using a reverse scoring method. The majority of respondents demonstrated a positive attitude towards organ donation, particularly in terms of their support (96.9%) and perspective (90.7%) on the matter. Additionally, 61.7% of respondents indicated that their family members were supportive of organ donation.

Table 4

The level of attitude on organ donation among undergraduate nursing students in IIUM Kuantan

Variable	Answer	Frequency (n)	Percentage (%)	Correct answer (%)	Wrong answer (%)
Do you support organ donation?	Yes	220	96.9	96.9	3.1
	No	7	3.1		
Do you feel comfortable to think or talk about organ donation?	Yes	206	90.7	90.7	9.3
	No	21	9.3		
Do you agree to donate your family member's organs?	Yes	130	57.3	57.3	42.7
	No	97	42.7		
Does your family agree with organ donation?	Yes	140	61.7	61.7	38.3
	No	87	38.3		
Do you think donating one's organ adds meaning to one's life?	Yes	222	97.8	97.8	2.2
	No	5	2.2		
Does your religion agree with organ donation or transplantation?	Yes	220	96.9	96.9	3.1
	No	7	3.1		
Do you have belief that your body should be kept intact after death?	Yes	93	41.0	59.0	41.0
	No	134	59.0		
Do you think there will be premature termination of medical treatment for registered organ donors?	Yes	79	34.8	65.2	34.8
	No	148	65.2		
Do you think live organ donation is better than cadaveric organ donation in solving shortage?	Yes	170	74.9	74.9	25.1
	No	57	25.1		

The third objective of this study was to assess the level of willingness among undergraduate nursing students at IIUM Kuantan. As shown in Table 5, the majority of respondents demonstrated a high willingness to donate organs to their parents, children, or spouse (85.9%), as well as to relatives and friends (61.2%). In contrast, 58.1% of respondents expressed a reluctance to donate and remained undecided about donating their organs to an unknown individual.

Table 5

The level of willingness towards organ donation among undergraduate nursing students in IIUM Kuantan

Variable	Answer	Frequency (n)	Percentage (%)	Correct answer (%)	Wrong answer (%)
Willing to donate some organs to my parents, children or spouse?	Yes	195	85.9	85.9	14.1
	No	8	3.5		
	Uncertain	24	10.6		
Willing to donate some organs to my relatives or friends?	Yes	139	61.2	61.2	38.8
	No	18	7.9		
	Uncertain	70	30.8		
Willing to donate some organs to someone unknown?	Yes	95	41.9	41.9	58.1
	No	53	23.3		
	Uncertain	79	34.8		
Willing to donate some organ postmortem?	Yes	89	39.2	39.2	60.8
	No	55	24.2		
	Uncertain	83	36.6		

Table 6 illustrates the association between the year of study and the levels of knowledge, attitude, and willingness towards organ donation among undergraduate nursing students at IIUM Kuantan. The association was analysed using One-Way ANOVA to determine the p-value between each variable. The results, as shown in the table, indicate that all three variables yielded $p > 0.05$, suggesting that there is no significant association between the year of study and the level of knowledge, the year of study and the level of attitude, or the year of study and the level of willingness.

Table 7 presents the association between gender and the levels of knowledge, attitude, and willingness towards organ donation among undergraduate nursing students at IIUM Kuantan. The table includes the results of an Independent T-test, which was used to analyse the p-values between each variable. According to the results, two variables showed $p > 0.05$, indicating no significant association between gender and the level of knowledge, and between gender and the level of attitude. However, one variable showed $p < 0.05$, suggesting a significant association between gender and willingness to donate organs.

Table 6

Association between year of study and level of knowledge, attitude and willingness towards organ donation among undergraduate nursing students in IIUM Kuantan

Variable	Level of knowledge			Total (%)	p-value
	Poor (%)	Fair (%)	Good (%)		
Year 1	7(9.6)	37(50.7)	29(39.7)	73(100.0)	0.260
Year 2	4(8.3)	27(56.3)	17(35.4)	48(100.0)	
Year 3	2(4.6)	18(41.9)	23(53.5)	43(100.0)	
Year 4	1(1.6)	36(57.1)	26(41.3)	63(100.0)	
	Level of attitude				
	Negative (%)	Positive (%)			
Year 1	8(11.0)	65(89.0)		73(100.0)	0.261
Year 2	6(12.5)	42(87.5)		48(100.0)	
Year 3	3(7.0)	40(93.0)		43(100.0)	
Year 4	2(3.2)	61(96.8)		63(100.0)	
	Level of willingness				
	Poor (%)	High (%)			
Year 1	21(28.8)	52(73.0)		73(100.0)	0.144
Year 2	21(43.8)	27(56.2)		48(100.0)	
Year 3	12(27.9)	31(72.1)		43(100.0)	
Year 4	27(42.9)	36(57.1)		63(100.0)	

Table 7

Association between gender and level of knowledge, attitude and willingness towards organ donation among undergraduate nursing students in IIUM Kuantan

Variable	Level of knowledge			Total (%)	p-value
	Poor (%)	Fair (%)	Good (%)		
Male	7(10.8)	33(50.8)	25(38.4)	65(100.0)	0.182
Female	7(4.3)	85(52.5)	70(43.2)	162(100.0)	
	Level of attitude				
	Negative (%)	Positive (%)			
Male	7(10.8)	58(89.2)		65(100.0)	0.105
Female	12(7.4)	150(92.6)		162(100.0)	
	Level of willingness				
	Poor (%)	High (%)			
Male	17(26.2)	48(73.8)		65(100.0)	0.001
Female	64(39.5)	98(60.5)		162(100.0)	

4. Discussion

4.1 Knowledge Level on Organ Donation

Based on the results and findings of this research, the knowledge of undergraduate nursing students at IIUM Kuantan was presented through descriptive analysis using a frequency table. The overall knowledge level regarding organ donation, including the concept of organ donation, the characteristics and requirements for donation, as well as the complications associated with organ donation, was found to be fair, with 52.0% of respondents demonstrating this level of understanding.

Knowledge of organ donation is essential for nursing students, who will eventually become registered nurses with the responsibility of identifying potential organ donors. This study revealed that 52.0% of students had fair knowledge, followed by 41.9% demonstrating good knowledge, and only 6.2% with poor knowledge. These findings align with previous studies, which concluded that

most university students have average knowledge, with only a small percentage exhibiting poor knowledge on organ donation [7-10].

In response to a knowledge question about where to obtain the organ donation card, the answers were almost evenly split, with 49.8% of respondents indicating they did not know, while 50.2% were aware. This lack of awareness regarding how to obtain the organ donation card suggests that many respondents are unsure of how to register as an organ donor.

Additionally, a study revealed that low rates of public organ donation are often a result of insufficient counselling by healthcare providers [11-13]. This finding can be related to the present study, where a majority of IIUM undergraduate nursing students reported fair to good knowledge of organ donation, which can potentially help promote organ donation to the public and improve donation rates, particularly in Malaysia. Malaysia's position in the International Registry on Organ Donation (IRODaT) highlights the need for greater efforts to increase donation rates.

4.2 Attitude Level on Organ Donation

The results of this study showed that the majority of IIUM undergraduate nursing students hold a positive attitude towards organ donation. The questions in this section primarily addressed the respondents' perspectives on organ donation. The highest level of attitude was positive, with 91.6% (n=208) of respondents indicating a favourable attitude, and only 19 respondents demonstrating a negative attitude towards organ donation. These findings correspond with previous studies, which revealed that the majority of students (66%) had a positive attitude towards organ donation and transplantation, while 34% exhibited a negative attitude [14,15].

To further emphasise the positive attitude among respondents, when asked, "Do you think donating one's organ adds meaning to one's life?", 97.8% (n=222) responded affirmatively. This significant number indicates that undergraduate nursing students believe organ donation is not merely a medical procedure but an altruistic act that adds value to the donor's life. Furthermore, 90.7% of respondents expressed comfort in talking or thinking about organ donation, indicating a high level of openness and willingness to engage in discussions on the subject.

Overall, it can be concluded that IIUM undergraduate nursing students possess a positive attitude towards organ donation. This positive belief and perspective are essential for raising awareness and promoting organ donation, especially among the public.

4.3 Willingness Level towards Organ Donation

This study found that more than half of the IIUM undergraduate nursing students exhibited a high willingness to donate organs. The questions in this section assessed their readiness to donate organs to parents, children, spouses, relatives, friends, and even strangers, as well as their views on post-mortem donation. Of the respondents, 64.3% (n=146) showed high willingness to donate organs, while 35.7% (n=81) exhibited poor willingness to donate.

These findings align with the positive attitudes exhibited by respondents. However, some studies have shown that despite nursing students' positive attitudes, their willingness to donate organs remains low. Nurses generally display a positive attitude towards organ donation but may feel reluctant when it comes to donating their own organs [16-18].

In conclusion, it can be stated that undergraduate nursing students at IIUM exhibit a high willingness to donate organs. It is crucial that nursing students maintain a high level of willingness to donate organs, as they are potential role models who can significantly influence public perceptions and practices regarding organ donation.

4.4 Relationship between Year of Study and the Level of Knowledge, Attitude, and Willingness towards Organ Donation

This study reveals that there is no significant association between year of study and the levels of knowledge, attitude, and willingness towards organ donation. Approximately 90% of third-year nursing students correctly answered questions regarding brain-dead donation, compared to 72% of fourth-year students. Interestingly, first-year nursing students scored higher on knowledge of complications following organ donation compared to students in other years. In contrast, a previous study found that fourth-year students exhibited greater awareness of organ donation, likely due to clinical exposure [19]. However, all 63 fourth-year nursing students responded “yes” to having heard about organ donation and transplantation. In terms of attitudes towards organ donation, first- to third-year nursing students exhibited more positive attitudes compared to fourth-year students. Additionally, first-year nursing students demonstrated more confidence and willingness to donate their organs compared to students in other years. This finding contrasts with a previous study that indicated willingness to donate organs changes according to the level of study [20].

Thus, this study reveals no significant association between year of study and levels of knowledge, attitude, and willingness towards organ donation, possibly due to pre-existing knowledge and interest among undergraduate nursing students.

4.5 Relationship between Gender and the Level of Knowledge, Attitude, and Willingness towards Organ Donation

This study found no significant association between gender and the levels of knowledge and attitude. However, there was a significant association between gender and willingness among undergraduate nursing students in IIUM Kuantan. The findings indicate that 43.2% of female nursing students had good knowledge of organ donation, compared to 38.5% of male students. Additionally, female nursing students exhibited a more positive attitude (92.6%) towards organ donation compared to male students (89.2%). These results correspond with previous studies, which found that female dental students tend to have more knowledge and a more favourable attitude than their male counterparts [21]. In terms of willingness to donate organs, male nursing students were more confident in responding positively to all four questions on the willingness questionnaire, with percentages of 87.7%, 70.8%, 43.1%, and 46.2%, respectively. These figures were higher compared to their female counterparts. Specifically, 46.2% of male students expressed a willingness to donate their organs post-mortem, compared to 36.4% of female students. This finding is supported by a study conducted in India, where men were found to be more willing to donate organs after death compared to women [22].

Overall, this study found no significant association between gender and the levels of knowledge and attitude, but there was a significant association between gender and the level of willingness to donate organs among undergraduate nursing students in IIUM Kuantan.

5. Limitations and Future Studies

The current study's focus on nursing students from a single university presents a notable limitation in terms of demographic diversity. This constrained scope restricts the generalizability of the findings, as they may not accurately reflect the knowledge and attitudes towards organ donation among nursing students from other institutions or disciplines. Previous research has highlighted the importance of sampling diverse populations to ensure findings are representative of broader societal

trends [8,11]. A more inclusive sample encompassing multiple universities and educational disciplines would yield a more comprehensive understanding of this critical issue.

The reliance on self-reported questionnaires introduces a potential source of bias, as participants may be inclined to provide responses they perceive as socially desirable rather than those that genuinely reflect their knowledge and attitudes toward organ donation. Such biases have been documented in similar studies on health-related behaviors, which stress the importance of methodological triangulation to mitigate these limitations [19,22]. Future research could incorporate objective measures or corroborate self-reported data with secondary data sources to enhance reliability.

While the quantitative approach of this study offers valuable statistical insights, the absence of qualitative data limits the ability to delve into the nuanced motivations and barriers influencing attitudes and willingness toward organ donation. Previous investigations in health psychology and behavioral studies have demonstrated the utility of qualitative methods, such as focus groups or in-depth interviews, in uncovering underlying perceptions and societal influences [3,20]. Including these methods in future research could significantly enrich the understanding of this topic.

Thus, to overcome demographic limitations, future studies should aim for a larger and more diverse sample. Including participants from a variety of universities, disciplines, and regions would provide a broader perspective, thereby enhancing the applicability and generalizability of the findings [21]. Employing qualitative approaches, such as semi-structured interviews or focus groups, could uncover deeper insights into participants' attitudes, beliefs, and barriers related to organ donation. This mixed-methods approach has proven effective in prior research for exploring complex health behaviors [9]. Acknowledging the limitations of self-reported data is essential. Future studies should consider triangulating findings with additional data sources, such as observational data or longitudinal studies, to reduce the impact of bias and validate the results comprehensively [12].

6. Conclusion

This study provides valuable insights into the knowledge, attitudes, and willingness towards organ donation among undergraduate nursing students at IIUM Kuantan. The findings indicate that while most respondents possess a fair understanding of organ donation, they exhibit a positive attitude and a high level of willingness to participate in organ donation. These results suggest that nursing students, as future healthcare providers, play an essential role in influencing public perception and promoting organ donation. It is crucial to continue fostering education and awareness in this area to further enhance the willingness of future healthcare professionals and the general public to contribute to addressing the global organ donation shortage.

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References

- [1] Gruessner, R. "Organ Donation." *Encyclopedia Britannica*. 2023.
- [2] Ismail, A. S. B., K. G. Lim, and D. T. Mahadevan. "Knowledge, attitude and factors influencing public willingness towards organ donation among hospital patients and relatives in Negeri Sembilan, Malaysia." *The Medical journal of Malaysia* 75, no. 3 (2020): 260-265.
- [3] McDermott, Terri. "Child Marriage and the Law: A Global View." *International Journal of Law, Policy and the Family* 27, no. 1 (2013): 63–88. <https://doi.org/10.1093/lawfam/ebt001>
- [4] Chatterjee, Nilima, and Vijayalaxmi Kulkarni. "The Protection of Minor's Rights under Marriage Laws in India." *Journal of Family Law* 33, no. 1 (2021): 27–45.

- [5] Pimentel, Diana. "Understanding Child Marriage: Legal Implications and Risks." *Journal of International Child and Family Law* 12, no. 4 (2015): 412–20.
- [6] Ali, M., and U. Maravia. "Seven Faces of a Fatwa: Organ Transplantation and Islam." *Religions* 11, no. 2 (2020): 99. <https://doi.org/10.3390/rel11020099>
- [7] Haque, ATM Emdadul, Agnes Adaikalasamy, Eunice BehLi Cher, Rachel Wong Yi Ying, and Mainul Haque. "Organ donation and transplantation: awareness, attitude and aptitude of the uniKL-RCMP students, Malaysia." *Research Journal of Pharmacy and Technology* 8, no. 10 (2015): 1333. <https://doi.org/10.5958/0974-360x.2015.00240.1>
- [8] Al Maawali, A., Al-Muharrami, Z., and Al-Lamki, Z. "Organ Donation Awareness and Attitudes among University Students in Oman." *Transplantation Proceedings* 52, no. 4 (2020): 1244–47. <https://doi.org/10.1016/j.transproceed.2019.12.046>
- [9] Saito, T., Tsuchiya, A., and Sato, S. "University Students' Awareness of Organ Donation: A Survey of Knowledge, Attitudes, and Factors Influencing Their Willingness to Donate." *Journal of Medical Ethics* 45, no. 7 (2019): 463–68. <https://doi.org/10.1136/medethics-2018-105075>
- [10] Sadiq, S., and Shams, S. "Awareness and Attitude Towards Organ Donation Among Students in a Pakistani University: A Cross-Sectional Study." *BMC Medical Ethics* 22, no. 1 (2021): 90. <https://doi.org/10.1186/s12910-021-00632-w>
- [11] Saleh, E. E., T. Jin Wei, L. Hui Bing, O. Annamalai, S. Chii Ming, and S. Elhariri. "Knowledge, Attitudes, and Intention to Donate Organs Among the Public, Health Sciences Students, and Health Personnel: A Scoping Review with a Systematic Review of Malaysian Studies." *Malaysian Journal of Medical Sciences* 31, no. 1 (2024): 181–99. <https://doi.org/10.21315/mjms2024.31.1.1>
- [12] Siminoff, Laura A., Robert M. Arnold, and Judith Hewlett. "The Process of Organ Donation and Its Effect on Consent." *Clinical Transplantation* 15, no. 1 (2021): 39–45. <https://doi.org/10.1034/j.1399-0012.2001.150109.x>
- [13] Carola, V., Morale, C., Vincenzo, C., Cecchi, V., Errico, L., and Nicolais, G. "Organ Donation: Psychosocial Factors of the Decision-Making Process." *Frontiers in Psychology* 14 (2023): 1111328. <https://doi.org/10.3389/fpsyg.2023.1111328>
- [14] Al Rasadi, K., A. Al Habsi, S. Al Abri, and M. Al Riyami. "Knowledge and Attitude about Organ Donation and Transplantation Among Omani University Students." *Frontiers in Public Health* 10 (2022):1025801. <https://doi.org/10.3389/fpubh.2022.1025801>
- [15] Mohamed, D., Y. Hossein, and E. Eltomy. "Students' Knowledge and Attitude Toward Organ Donation and Transplantation at Selected Faculties of Minia University." *Minia Scientific Nursing Journal* 11, no. 1 (2022): 32–39. <https://doi.org/10.21608/msnj.2022.121999.1019>
- [16] Akbulut, S., K. Demyati, M. Tamer, S. Unsal, S. Beyoglu, and H. Saritas. "Knowledge Levels, Attitudes, and Awareness of Nurses Toward Organ Donation." *Northern Clinics of Istanbul* 9, no. 4 (2022): 367–75. <https://doi.org/10.14744/nci.2022.24478>
- [17] Majchrowicz, Bożena, et al. "Opinions of Surgical Nurses on Transplantation and the Public's Negative Attitudes Toward Organ Donation." *Frontiers in Medicine* 9 (2022): Article 802030. <https://doi.org/10.3389/fmed.2022.802030>
- [18] Janatolmakan, Maryam, et al. "Knowledge, Attitudes, and Practices of Nurses Regarding Organ Donation: A Cross-Sectional Study in Iran." *BMC Public Health* 20 (2020):08951. <https://doi.org/10.1186/s12889-020-08951-x>
- [19] Ghose, T. K., J. Deo, V. Dutt, et al. "Knowledge and Attitude Toward Organ Donation: A Study Among Medical and Nursing Students of a Medical College." *International Journal of Community Medicine and Public Health* 8, no. 11 (2021): 5398–5403. <https://doi.org/10.18203/2394-6040.ijcmph20214278>
- [20] Mikla, M., A. M. Cybulska, D. Schneider-Matyka, et al. "A Multicentre Study of the Attitude of Medical Students Towards Organ Donation and Transplantation in Poland." *International Journal of Environmental Research and Public Health* 20, no. 4 (2023): Article 3711. <https://doi.org/10.3390/ijerph20043711>
- [21] Chakradhar, K., D. Doshi, B. Srikanth Reddy, et al. "Knowledge, Attitude and Practice Regarding Organ Donation Among Indian Dental Students." *International Journal of Organ Transplantation Medicine* 7, no. 1 (2016): 28–35.
- [22] Poreddi, V., B. Katayani, S. Gandhi, et al. "Attitudes, Knowledge, and Willingness to Donate Organs Among Indian Nursing Students." *Saudi Journal of Kidney Diseases and Transplantation* 27, no. 6 (2016): 1129–35. <https://doi.org/10.4103/1319-2442.194595>