



Understanding ambivalence toward organ donation and transplantation: An exploratory study of nursing students



Paloma Peroni Contiero^{a,*}, Donna M. Wilson^{b,c,d}

^a University of São Paulo, Ribeirão Preto College of Nursing, Ribeirão Preto, São Paulo 14040-902, Brazil

^b Faculty of Nursing, University of Alberta, Edmonton, Alberta T6G 1C9, Canada

^c Faculty of Education and Health Sciences, University of Limerick, Ireland

^d Faculty of Medicine and Dentistry, University of Alberta, Edmonton, Canada

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ABSTRACT

Background: There is a continuing shortage of organs for transplantation purposes worldwide. Determining why this is a recurring problem is necessary as organ transplantation is a highly successful life saving measure. It is possible that ambivalence is key to this shortage.

Objectives: To explore the possible existence of ambivalence toward organ donation and transplantation among Canadian nursing students, and gaining insights into this ambivalence when present.

Design: An exploratory study using a structured questionnaire to explore the existence of ambivalence in relation to donating and receiving an organ for transplantation purposes.

Methods: A total of 170 undergraduate nursing students at a Canadian university participated in this study by completing a brief questionnaire distributed to all five classes of nursing students who were taking a mandatory research course during the 2017–18 university calendar year. The survey tool was designed to collect quantitative and qualitative data in relation to their ambivalence toward organ donation and transplantation.

Results: Nursing students are more willing to receive an organ than to donate. The willingness to donate or receive an organ was related to their personal beliefs and moral codes, religion, level of knowledge, and the existence of ambivalence.

Conclusions: This study reveals important insights into ambivalence about donating and receiving organs. The study found it was very easy to introduce ambivalence among nursing students, with this information highly relevant for student education and other applications.

1. Introduction

Ambivalence has been discussed by many authors over the years, with a consensus on defining it as the existence of mixed feelings, both positive and negative, toward something (Conner and Sparks, 2002; Gardner, 1987; Thompson et al., 1995). Essentially, any individual can feel ambivalent toward an object, person or event. However, ambivalence can also exist in relation to much more complex subjects, such as organ donation and transplantation the focus of this research report.

For some time, there has been a shortage of organs for transplantation purposes in most countries (Kent and Owens, 1995; Matten et al., 1991; Prottas and Batten, 1988; Roels et al., 2010). This shortage is often thought to be the result of people not making a decision to be an organ donor if possible, brain dead patients not being identified and referred as potential donors, families not being approached to discuss the possibility of donation, and families refusing to donate when

approached (Barber et al., 2006; Bener et al., 2008; Roels et al., 2008). However, it is now apparent that healthcare professionals do not discuss the possibility of organ donation with family members because they are not comfortable doing this (Cantwell and Clifford, 2000; Jennett and Hessel, 1981; Prottas and Batten, 1988; Roels et al., 2010; Wakeford and Stepney, 1989). Although healthcare professionals know about the effectiveness of organ transplantation, this knowledge is not contributing to their comfort in discussing organ donation with grieving families.

It is essential to increase the recovery of organs to meet the growing demand worldwide, this would not only improve the quality of life and longevity of the recipients, but also reduce waitlist deaths (Girlanda, 2016). It is a perplexing quandary that so few people take steps to become organ donors. For instance, 90% of Canadians support organ donation when asked, but only 51% have actually made the decision to donate (Canadian Blood Services, 2016). This difference suggests

* Corresponding author.

E-mail addresses: paloma.contiero@alumni.usp.br (P.P. Contiero), donna.wilson@ualberta.ca (D.M. Wilson).

people can think favorably about organ donation, but for some reason, they do not declare themselves as potential donors (Protas and Batten, 1988; Van den Berg et al., 2005). Consequently, the gap between the number of people waiting for an organ and the number of available organs for transplantation is increasing and expected to grow rapidly (Girlanda, 2016; Protas and Batten, 1988). This quandary led to a research study to learn more about ambivalence in relation to organ donation and transplantation.

2. Study background

Conflicting thoughts regarding any matter can influence attitudes and actions related to it, particularly when these thoughts cause uncomfortable feelings such as anxiety or fear (Newby-Clark et al., 2002; Williams and Aaker, 2002). People who accept their duality of emotions have been found to feel less discomfort and tension than those who struggle to deal with it and who then continue to demonstrate negative attitudes and higher rates of uncomfortable feelings (Williams and Aaker, 2002).

Nurses are essential professionals on organ transplantation teams as they often identify potential organ donors, approach family members for consent, and perform many other roles in the processes of procuring and transplanting organs (Akpınar Soylemez and Ordin, 2017; Cantwell and Clifford, 2000; Kent and Owens, 1995; Matten et al., 1991; Sque et al., 2000). A growing body of evidence is revealing nurse knowledge, attitudes, and willingness to discuss organ donation with family members are major influences on both the supply and demand for organs (Cantwell and Clifford, 2000; Kent and Owens, 1995; Protas and Batten, 1988; Smudla et al., 2012; Wakeford and Stepney, 1989). An older study found nurses can hold doubts and mixed feelings about registering personally for organ donation, with this research revealing not only their own ambiguity but indicating that ambiguity is likely to be found among lay persons; which helps explain the ongoing lack of availability of organs for transplantation purposes (Kent and Owens, 1995). A more recent study found nursing staff have less positive attitudes toward organ donation, low levels of acceptancy of brain death as a valid determination of death, and low comfort rates over their organ donation tasks (Roels et al., 2010). Despite this, this study revealed nursing staff are more willing to request further education about organ donation as compared to medical professionals (Roels et al., 2010).

Research on health professional ambivalence is particularly important as professional attitudes can be impactful. Some authors (i.e. Labouvie-Vief et al., 1989; Williams and Aaker, 2002) believe ambivalent feelings lead to negative attitudes and actions, especially if the individual does not have the maturity to understand or accept their duality of emotions. Young people in healthcare education programs are a particularly interesting group, as their feelings and thoughts are considered in formation, although they may already have gained ambiguity or hold strong and fixed views. It is therefore of value to determine what nursing students think about organ donation and transplantation.

Nursing students are the next generation of healthcare professionals, so their knowledge and attitudes in relation to organ donation and transplantation have important implications for future practices in this field (Cantwell and Clifford, 2000). The aim of the present study was to explore the possible existence of ambivalence toward organ donation and transplantation among Canadian nursing students, and gain insights into this ambivalence if present. This study is important as there is a limited number of research studies focused on nursing student thoughts or feelings toward this issue. One study found nursing and medical students were more willing to accept an act of donation than to donate their own organs, and medical students were more reluctant to sign an organ donor card than nursing students (Cantwell and Clifford, 2000). Most of the few studies completed to date only address nursing student knowledge of organ transplantation, with concern raised that nursing students receive little education about organ transplantation or

donation (Akpınar Soylemez and Ordin, 2017; Cantwell and Clifford, 2000; López-Montesinos et al., 2010; Tam et al., 2012).

3. Research methods

After research ethics approval for this study was received from the University of Alberta's Health Research Ethics Committee (PRO00077457), a devised questionnaire was given to undergraduate nursing students at one Canadian university who were taking a mandatory research course during the 2017–18 university calendar year. This questionnaire sought to learn from them if they hold ambivalent feelings toward organ donation and transplantation, and gain insight into this ambivalence if present.

The questionnaire was developed with 2 socio-demographic questions and 5 questions designed to collect the research data. Two of the research questions were related to donating an organ, two questions were related to receiving an organ, and the fifth open-ended question gave students the opportunity to talk about their previous answers.

This survey tool was created although Simmons (1987) developed an instrument to measure ambivalence toward organ donation. This reliable scale, known as the “Simmons Ambivalence Scale (SAS)” focuses on living donors (as cited in Zuckoff and Dew, 2012) and as such it did not address the purpose of this study. Other authors (Kaplan, 1972; Thompson et al., 1995) have also studied ambivalence, but their tools were designed to measure ambivalence among individuals toward a certain attitude issue; these tools also did not address the purpose of this study.

Kaplan (1972) suggested that ambivalence can be identified by splitting each item at the neutral point. Separating an attitude issue into positive and negative characteristics leads subjects to ignore the negative characteristics when thinking about the positive ones and vice-versa. This separation makes subjects chose either a positive or negative answer, as they are unable to remain undecided or uncommitted. Thompson et al. (1995) similarly created a scale that allows assessments in both dimensions of ambivalence (positive or negative), with their scale also addressing what Kaplan proposed. This advice was helpful for our questionnaire design.

The authors of the present study recognized the need to create an instrument to learn from nursing students about whether they held ambivalence about organ donation and transplantation. The questionnaire created for this study did not intend to measure their specific level of ambivalence, instead it was designed to determine if any personal ambivalence existed and then gain insight into this ambiguity. For that reason, two sets of paired questions were devised, one set to determine ambiguity over organ donation and one set to determine ambiguity over receiving an organ.

The questionnaires were distributed in all five nursing classes, among students taking a mandatory third year nursing research course. Participation was voluntary and anonymous; no identifying information was gathered. Before an explanation about the study was provided in class by a student member of the research team, the professor who was teaching the class was asked to leave the room. The students could then be asked to take part in the study without pressure. It was also emphasized to them that they did not need to complete the questionnaire. A letter of information, together with the questionnaire, was handed to the students and implied consent to participate was assumed when students completed and returned the questionnaire to the research team.

For the data analysis, descriptive and comparative statistical tests were used to explore the data and answer the research question: “Does ambiguity exist among nursing students toward organ donation or organ transplantation?” The tests used were based on the level of data, with the tests primarily being Chi-square analysis, *t*-tests, ANOVA, and correlations. Classic content analysis and the categorization of findings were performed on the written/text information gained through the open-ended question.

4. Results

4.1. Participants characteristics

A total of 257 nursing students were provided with a questionnaire and information about this study. A response rate of 66.1% was achieved, as 170 students returned completed questionnaires and thus indicated their consent to take part in this study. The majority of participating students were female (84.1%), with a mean age of 22.2 years (mode = 19, median = 21). Their ages ranged from 17 to 40 years. The participating students numbered 24 to 43 per class.

4.2. Survey findings

Among the completed questionnaires, 51.8% of participating students were definitely willing to consider donating an organ when asked to think about all the good things that could occur with organ donation. Another 38.8% were probably willing to consider donating an organ and 9.4% were definitely or probably unwilling to donate an organ. No gender differences in these responses ($X^2 = 1.842$, $df = 3$, $p = .606$) was found. The mean ages of students who chose different options for this question also did not differ significantly ($F = 1.948$, $p = .146$).

When asked to consider all the bad things that could occur with organ donation, 30.6% were strongly willing to consider donating an organ, with another 40.6% somewhat willing to consider this. Moreover, 28.8% were unwilling to donate an organ, twice the rate as when they thought about the good things of donating. No gender differences in responses ($X^2 = 5.588$, $df = 3$, $p = .133$) was found. The mean ages of students who chose different options for this question also did not differ significantly ($F = 1.397$, $p = .246$).

When considering the good things that could happen with receiving an organ, 64.1% of participants indicated they were definitely willing to consider receiving an organ. Another 31.8% were somewhat willing to consider it, leaving 4.1% unwilling to consider this act. No gender differences in these responses was found ($X^2 = 0.370$, $df = 3$, $p = .946$). The mean ages of students who chose different options for this question also did not differ significantly ($F = 0.158$, $p = .854$).

When asked to consider all the bad things that could occur when receiving an organ, 37.1% of the students indicated that they would definitely consider receiving an organ. Another 46.5% were somewhat willing to receive an organ, while 16.4% would not be willing to receive an organ. No gender differences in their responses was found ($X^2 = 7.137$, $df = 3$, $p = .068$). The mean ages of students who chose different options for this question also did not differ significantly ($F = 1.887$, $p = .134$).

Among the 170 participating students, 38 (22.4%) changed one or both of their answers in relation to the two paired questions, with this change in answers indicating ambivalence in donating, receiving, or both donating and receiving organs. Among these 38 students, 18 (47.4%) revealed mixed feelings toward donating and also receiving an organ when asked to consider the good and the bad things that could occur in these processes. Seventeen (44.7%) revealed mixed feelings toward donating an organ when asked to consider the good and the bad things related to donating an organ. Three of the 38 (7.9%) revealed mixed feelings toward receiving an organ when asked to think about the good and bad things that can occur in relation to receiving an organ.

No gender differences was found between the students who did not change their responses and those who changed answers and thus exhibited ambivalence ($X^2 = 1.694$, $df = 2$, $p = .429$). The mean ages of students who chose different options versus those who did not change their answers also did not differ significantly ($F = 2.057$, $p = .143$). However, the students who demonstrated ambivalence toward receiving an organ were younger (mean = 18.3) than the students who showed ambivalence toward donating an organ (mean = 20.5) and also the students who showed ambivalence toward both donating and receiving an organ (mean = 22.6).

Table 1

Categories and subcategories of qualitative data.

Categories	Subcategories
Supporters of donating/receiving an organ	Organ donors Willing to donate, but not declared donors Benefits outweigh the risks
Donating/receiving an organ depends on some factors	Religious/moral purposes Recipient and risks
Afraid of organ donation and/or transplantation	Afraid to donate Afraid to receive Afraid of the process of donation/transplantation
Lack of knowledge	How to be an organ donor More information is needed

In total, 74 of the 170 students (43.5%) responded to the open-ended question. Through content analysis, four categories and ten subcategories were identified, as shown in Table 1 and as described below.

4.2.1. Supporters of donating/receiving an organ

4.2.1.1. Organ donors. Six (8.1%) of the 74 student respondents were declared organ donors: “I have already signed my Alberta Health Care card driver’s license to show that I want to be an organ donor. Also my family is aware of my wishes”.

4.2.1.2. Willing to donate, but not declared donors. Thirty eight students (51.4%) were willing to donate but were not declared donors. Among these, 11 were only willing to donate after death: “If I’m dead, I really have no problem donating my organs”. In contrast, 5 students had the intention to be a living donor: “I would prefer to donate an organ while I’m alive and not after death”. Two students indicated their willingness to donate an organ in both cases: “I would [...] donate an organ to a close friend/family member. I also want to donate all viable organs if I die in a fatal accident.”

4.2.1.3. Benefits outweigh the risks. Five students (6.7%) reported the benefits of donating and/or receiving an organ outweigh the risks: “Not trying is not an option.”

4.2.2. Donating/receiving an organ depends on some factors

4.2.2.1. Religious/moral purposes. Four students (5.4%) indicated that religion-based moral reasons impacted their decisions about donating and receiving an organ: “I think most of my answers regarding donating an organ stems mostly from my reluctance to take away from my body based on religious purposes. However, I do feel like wanting to accept an organ make me hypocritical against giving them [...]”. Another student said “organ donation is not part of the practice” of her religion and another said that “morals and beliefs about organ donation have a play in why you would donate/receive organs.”

4.2.2.2. Recipient and risks. Some students (23%) indicated that their willingness to donate an organ depends on who the recipient is and what the risks are: “My willingness to donate an organ is very much tied to whom the recipient is” and “if myself and the receiver were to get complications from a transplantation, then I would be hesitant.”

4.2.3. Afraid of organ donation and/or transplantation

4.2.3.1. Afraid to donate. Three students indicated they were afraid to donate organs to someone in need: “Organ donation is a scary situation when thinking about all the bad things, but overall I would want to donate because you are helping others and it is a good thing.”

4.2.3.2. Afraid to receive. Four students indicated they were afraid to receive an organ because of possible risks or complications: “The risk in

donation does not seem as scary as receiving an organ,” but they also affirmed that “in a life or death situation, you may have nothing to lose” and that they “wouldn't have a choice” if it meant their lives would be saved.

4.2.3.3. Afraid of the process of donation/transplantation. One student indicated fear was related to her/his ambiguity: “Good things make me say yes probably. Bad things... no!!” Another student said “thinking of complications makes me want to avoid transplants.”

4.2.4. Lack of knowledge

4.2.4.1. How to be an organ donor. Three participants said they would like to learn how to sign up to be an organ donor, thus demonstrating their willingness to donate organs but they lacked the knowledge to do so: “I would like to learn how to sign-up to be an organ donor.”

4.2.4.2. More information is needed. Nine participants (12.2%) said they need more information to make a decision: “I am interested in organ donation but do not understand the entire process” and “I feel like some of my answers were influenced by my lack of knowledge on the issues of transplant.” Another student affirmed that he/she was “just not educated enough to make an informed decision.”

5. Discussion

Through the use of a brief and simple data collection tool, the authors identified a considerable level of personal ambivalence toward organ donation and transplantation among undergraduate nursing students. This ambivalence was easily induced by the instructions for them to separately think of all the good and the bad things that could occur in relation to organ donation and transplantation. If such easily induced ambivalence is also present among members of the general public and health professionals involved in organ donation and transplantation, this helps explain the low rate of donor card signage and the low number of actual donations worldwide.

In this study, more ambivalence was associated with donating than receiving an organ, which is understandable as receiving an organ is generally viewed as a way to live longer. In contrast, donating typically requires death or an operation to remove an organ while alive. Envisioning one's own death can be very difficult, particularly for young people who likely anticipate living to old age. These findings are similar to those of Cantwell and Clifford's (2000) study of nursing students being more willing to accept an organ or tissue for survival purposes than donate their own organs. Keshtkaran et al. (2016) also identified mixed feelings among Iranian nurses who were caring for brain dead patients, but their ambivalence was related to religion, which put their effectiveness to identify potential donors and approach family members in doubt.

A considerable proportion of our study participants indicated that donating an organ depends on some key factors such as who the recipient is and what the risks involved in the process of donating are. These findings help to explain why more students feel ambivalent toward donating than receiving an organ, as the acceptance of an organ usually only features one's own survival.

Surprisingly, gender and age were not factors in the student responses to each question nor in the ambivalence identified through changes in their responses. These findings illustrate a potential duality of emotions among younger people, as was first identified in Labouvie-Vief et al.'s (1989) study. Younger people could therefore be understood as being prone to ambiguity, as their opinions are still being formed as they grow through life experiences. As such, it is relevant to think that how the participants answered each of the four questions about organ donation and transplantation is indicative of their family or cultural backgrounds and thus their fundamental family-based religious morals, beliefs, knowledge, and experiences over the simple considerations of their age and gender.

As also revealed in the studies of Prottas and Batten (1988) and Van den Berg et al. (2005), the majority of nursing students who participated in the present survey were willing to donate an organ, but were not declared donors. This finding corroborates the Canadian Blood Services (2016) report, that found only 51% of surveyed people have actually made the decision to donate one or more organs. It is possible that lack of knowledge is a factor here as some students stated that they were not informed enough about the process of organ donation and transplantation to have a formed opinion about it. Knowledge is known to be a contributing factor for health professionals' practice, as knowledge is heavily related to or influential for attitudes and beliefs (Babaie et al., 2015; Matten et al., 1991).

As nurses are essential to the process of donation, being one of the first professionals to be able to identify potential donors, it is of great importance that students are educated about organ donation (Bener et al., 2008; Abbasi Dolatabadi et al., 2010). Given the wide range of topics that nursing students need to be educated about now, only a few students will receive more than a basic orientation to organ donation and transplantation in the study participants' program, such as through a clinical practicum or choosing to write a paper on the topic.

Education is a key tool for positively influencing health professional knowledge, attitudes, and beliefs toward organ donation, with this potentially increasing the number of donors (Bener et al., 2008; Matten et al., 1991). Studies about an educational strategy with university students of several disciplines, including nursing students, revealed that it is possible to make a favorable change in attitudes and knowledge toward donation and transplantation, with this development consequently influencing the decisions of potential donor families (Abbasi Dolatabadi et al., 2010; Garcia et al., 2008; Manyalich et al., 2010).

As such, ambivalence may be reduced through educational programs, and especially when education occurs in early stage nursing courses (Abbasi Dolatabadi et al., 2010; Garcia et al., 2008; Manyalich et al., 2010). Being well educated about organ donation and transplantation could affect not only the personal life of nursing students, as they are more likely to sign a donor card, but also affect their professional practice, since nurses who have positive beliefs and attitudes toward donation can help to increase the rates of agreement for organ retrieval.

However, the findings of this study need to be considered in relation to research limitations. The sample size was small and students were only from one university, indicating that the results cannot be generalized to all nursing students. The survey tool used to identify the existence of ambivalence among nursing students was not validated. More investigations need to be conducted to identify if nursing students have the potential to hold or easily gain mixed feelings toward organ donation and transplantation.

6. Conclusions

Studies on ambivalence are important for gaining information needed to address the shortage of organs for transplantation purposes. This study of Canadian nursing students revealed they are more willing to receive an organ than to donate one. However, it is much more relevant to indicate that they easily became ambiguous about organ donation and transplantation through simply asking them to think about all the good and the bad things that can happen in the processes of organ donation and transplantation.

Young people, as well as nursing students, should be expected to have ambivalence in relation to many aspects of life, including donating or receiving an organ to save someone else's life or their own. Education is an important way for students to raise their knowledge and gain evidence-informed attitudes and beliefs. In short, education could help decrease ambivalence. Given the importance of organ transplantation for saving lives and for reducing suffering, the curriculum of nursing students should be changed to increase their knowledge about the processes of organ donation and transplantation, which in turn could

result in higher rates of donors worldwide. More studies on this subject must be carried out however in order to provide further information about the impact of ambivalence on organ donation and transplantation, and the impact of education of nursing students in this topic.

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Conflict of interest statement

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