Organ Donation Education and its Effects on Undergraduate Nursing Students' Knowledge and Perceptions

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Abstract

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Objective: To evaluate the effects of an educational intervention on undergraduate nursing students’ knowledge, perceptions, and the potential of them registering as organ donors.

Methods: Twenty eight undergraduate nursing students from a private college in central New York participated in this study. Education was presented through a PowerPoint and podcast. Data were collected through a pre- and post-test survey with a 5 point Likert Scale questionnaire via a system called Qualtrics. All analyses were conducted using Statistical Package for the Social Science (SPSS 24).

Results: Participants had a high baseline knowledge of organ donation facts with the mean pre-test score average of 87.5% (SD= 13.6%). After implementation of the educational intervention, nursing student’s knowledge increased as to 95.9% (SD= 8.4%). Post-intervention, participants were also more comfortable with talking to their patients and their family members about organ donation education.

Discussion: Nursing student’s knowledge increased with an educational intervention, it is recommended that these students receive this type of educational opportunity. Nursing students are the future nurse’s of America and it is essential that students have received all necessary education prior to graduating nursing school.

Document Type
Thesis

Degree Name
M.S. in Advanced Practice Nursing

First Supervisor
Christine Nelson Tuttle

Second Supervisor
Heather McGrane Minton

Subject Categories
Nursing

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Organ Donation Education and its Effects on Undergraduate Nursing Students’ Knowledge and Perceptions

Jessica D’Acquisto BS, RN

Submitted in partial fulfillment of the requirements for the degree Master’s in Advanced Practice Nursing

Supervised by Dr. Christine Nelson-Tuttle DNS, APRN, PNP-BC

Wegmans School of Nursing

Saint John Fisher College

December, 2017
Abstract

Introduction: America continually struggles with a shortage of registered organ donors and a constant need for organs. To address this, future nurses should be taught about the need for organ donation in their studies, so that as nurses, they can help increase the number of registered organ donors in the country by educating patients about the value of organ donation.

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Discussion: Nursing students’ perceptions and knowledge increased with an educational intervention, it is recommended that these students receive this type of educational opportunity. Nursing students are the future nurses of America and it is essential that students have received all necessary education prior to graduating nursing school.
Introduction

Every day approximately 79 people receive organ transplants; however, 22 people die every day waiting for an organ that would save their life ("Why Organ, Eye, and Tissue Donation," n.d.). So the question is, why are these 22 people dying on the organ donation waiting list every day when there are hundreds of millions of people living in America? If one person consents to organ donation, up to eight lives can be saved ("Why Organ, Eye, and Tissue Donation," n.d).

Each person’s knowledge, attitudes, and perception of organ donation affect donor rates (Rykoff et al., 2010). A lack of education in regards to organ donation is attributed to a lack of knowledge amongst the population. The population may believe they are educated and understand the need for organ donation; however, what they believe they know may actually be misconceptions. Experts suggest that the general public should receive more education to increase the number of persons who agree to register as potential organ donors. This could be accomplished by using health care professionals like nurses as educators. To do this, researchers assert that school program planners should address the knowledge deficit regarding organ donation and brain death, mistrust of the medical system, and the families’ lack of discussion about the organ donation decision by including education for nurses in their curriculum (Kurz, 2014).

Nurses, as the largest group of health care professionals, play a pivotal role in organ donation decisions. As also one of the most trustworthy groups, it is imperative that nurses not only successfully answer their patient’s questions, but they also need to provide any and all information that is essential to their patient’s decision making. Personal attitudes toward organ donation can influence nurses’ interactions with potential
donor families as nurses respond to questions, present information, and interact as
liaisons with organ procurement organizations. Educating future nurses about organ
donation and shaping their positive attitude towards donation is a strategy to reduce
disparities between the number of donors and the number of transplant candidates (Kurz,
2014).

There are numerous educational strategies used with medical students including
didactic elective courses, use of standardized patients, clinical electives with a surgical
procurement team, and discussion boards (Kurz, 2014). One may wonder if these
strategies could be adapted and included into the curriculum of undergraduate nursing
students. Indeed, these educational interventions could benefit undergraduate nursing
students as it they do for medical students. It is essential to find an educational strategy
that not only benefits the nursing student’s learning but also complements their intent of
having discussions with the public about organ donation. Starting organ donation
education for nursing students early while their minds are still learning and can be
molded over time. With early education, the nursing students can hopefully become more
knowledgeable in regards to the subject and be more comfortable to educate their
patients. Given the role that nurses play in patient education, it is necessary for nursing
students to be properly trained and educated in organ donation with hopes of increasing
the number of organ donors.

**Background and Significance**

The demand for solid organs well exceeds what is available to the population
(Rykoff et al., 2010). An increased supply of organ donors has the possibility of
correcting this gap. When the general public is asked about organ donation, people
generally support it; but, only 45% to 54% actually consent to donation when asked (Kurz, 2014). Each person’s knowledge, attitudes, and perception of organ donation affect donor rates (Rykoff et. al., 2010). The general population may not know that organ transplantation is considered to be a lifesaving procedure for someone with end-stage organ failure and is also less expensive than other medical therapies such as hemodialysis (Rykoff et al., 2010). This not only saves the patient and their family money but actually saves medical costs for the country.

There are a variety of different reasons why the general public may or may not support organ donation. Studies indicated that altruism is a factor of supporting organ donation because people wanted to give the gift of life to another person and give them a second chance at better health (Exley, White, & Martin, 2002; Siminoff, Mercer, Graham, & Burant, 2007). Another reason why people support organ donation is because they already had background knowledge on organ donation, had positive views about it, and were registered organ donors themselves (Rodrigue, Cornell, & Howard, 2008; Siminoff, Gordon, Hewlett, & Arnold, 2001; Siminoff et al., 2007). The positive values and beliefs of organ donation that these people have, along with the correct knowledge of the topic can lead to better outcomes involving registering as an organ donor.

Barriers to organ donation included wanting to keep the body whole and for it to not be disfigured (Brown et. al., 2010; Rodrigue et al., 2008; Siminoff & Lawrence, 2002). Other barriers to supporting organ donation include not wanting to delay funeral services (Exley et al., 2002; Rodrigue et al., 2008; Siminoff et al., 2007) and wanting an open casket at the funeral (Siminoff et al., 2007). Through education, the population can
learn that the above barriers to organ donation consent and donor registration are actually misconceptions.

Additionally, there are misconceptions of how it is determined for who receives a donated organ over a different candidate. Some of the population believes that patients with the most money, fame, or education receive donated organs before other ill candidates (Siminoff et al., 2001). This is actually not the case; a patient in need of an organ is put on a nationwide waiting list along with other patients in need of an organ transplant. The waiting list is generated by the United Network for Organ Sharing (UNOS) which is the organization that oversees all organ donation, procurement, and transplant programs across the nation ("Why Organ, Eye, and Tissue Donation," n.d). UNOS generates a ranking system of transplant candidates and then matches a possible organ to the candidate by comparing blood type, tissue type, medical urgency, waiting time, expected benefit, geography and other medical criteria ("Why Organ, Eye, and Tissue Donation," n.d).

The truths and misconceptions lay the groundwork for the educational intervention that was used in this study. As future nurses, nursing students will be educating multiple generations of patients with facts surrounding organ donation rather than perpetuating myths. Nurses can be considered to be first line in education for their patients. As being front line educators, nursing students will have a better knowledge of organ donation and will be able to educate the population as they interact with people on a daily basis. Registered nurses are consistently considered to be amongst the American public’s most trusted groups (Kurz, 2014).
**Purpose**

The purpose of this study was to evaluate the effects of an educational intervention on undergraduate nursing students' knowledge, perceptions, and the potential of them registering as organ donors. The first hypothesis of this study is that the participating undergraduate nursing students will have an increase in knowledge after the PowerPoint and podcast presentation. These undergraduate nursing students would also be more comfortable with not only talking to their patients about organ donation but they would be more comfortable talking with their own families about this topic. The second hypothesis was that more of the participants would be interested in becoming a registered organ donor. The participants would learn the facts about organ donation from the educational intervention and realize that becoming a registered organ donor does more good for the population.

**Methodology**

The method of this study mimics the ideas and methods used in a previous study (Kurz, 2014). A convenience sample of undergraduate nursing students was obtained from an undergraduate nursing program in a private college, located in central New York, after approval from their institutional review board. The only inclusion criteria were that the participants had to be fulltime undergraduate nursing students at the chosen private college and at least 18 years of age.

This study was quantitative and descriptive in nature. Data were collected through a pre-test survey and post-test survey system called Qualtrics, which is a system specific for the private institution. The pre-test and post-test surveys included demographic questions, true/false type questions regarding organ donation, and questions using a 5
point Likert scale about organ donation perceptions. The pre-test and post-test surveys were anonymous in order to protect the participant’s identity and participants were instructed that completing the surveys meant that consent was implied. Each participant created their own four digit pin code that was used to compare the results from both surveys.

By using a pre-test survey, baseline knowledge and perceptions of organ donation was able to be collected prior to initiating the educational intervention. The questions used for the pre-test survey were additionally used for the post-test survey in order to evaluate if there were any changes with organ donation knowledge and perceptions. The educational intervention was a Power Point presentation with podcast (approximately 10 minutes in length) which included information regarding organ donation misconceptions, facts, statistics, factors, and barriers of consent and donation, and details about the process of organ donation and transplantation. The power point presentation and pre- and post-test surveys were reviewed by a clinical expert at the private institution prior to distribution.

The pre-test, post-test, and educational intervention was emailed to nursing professors, who agreed to assist with the research. The professors were provided with the links to the surveys and presentation and they were able to distribute these to their students. The researcher had no access to the class listings and therefore, was unable to obtain personal information about participants in the study. Since the researcher did not have access to the class listings where the surveys and Power Point would be distributed; anonymity and confidentiality was assured to the research participants.
The participants were instructed to take the pre-test survey first, were then exposed to the intervention and afterword, they took the post-test survey. Participants were given approximately three weeks to complete the pre-test, intervention, and post-test survey and total participation took no longer than 30 minutes. The study began in the month of April when the topic of organ donation is prominent in society as April is National Donate Life month and ended the first week of May prior to graduation. All analyses were conducted using the Statistical Package for the Social Sciences (SPSS) 24.

Results

A total of 28 undergraduate nursing students participated in this study. After analysis of demographic information; there were 26 female (92.9%) and 2 male (7.1%) participants with a mean age of 24 years (SD=5.5, range 19-42 years) (Table 1). The majority of participants were already a current registered organ donor (60.7%) (Table 1).

Chi-square analyses expressed that in the pre-test, 21 (75%) participants reported being extremely likely or somewhat likely to register as an organ donor. Post-test results showed an increase to 26 (93%) participants reporting as extremely likely or somewhat likely to register as an organ donor.

There were 22 (79%) participants who were extremely or somewhat comfortable with talking to their families about organ donation and 6 (21%) participants who were neither comfortable nor uncomfortable prior to the intervention. Results from the post-test revealed that 26 (93%) students believed that they were more comfortable with talking to their own families while 2 students (7%) were still uncomfortable with talking to their families about organ donation.
Pre-test results exhibited that there were 19 (68%) students who indicated they were somewhat or extremely comfortable, 7 (25%) students were neither comfortable nor uncomfortable, and two (7%) students reported that they were uncomfortable with talking to their patients about organ donation. Post-test results indicated that 24 (86%) students reported they would be more comfortable with talking to their patients after being exposed to the educational intervention and four (14%) students who were still neither comfortable nor uncomfortable about talking with their patients.

Table 2 lists the true/false questions regarding organ donation facts and misconceptions which were asked in the pre-test and post-test surveys. Next to each question were the correct percentages scored for each question. A paired samples t-test was conducted to compare the mean scores on knowledge between the pre- and post-tests. There was a statistically significant difference in the mean score for pre-test (M=87.5%, SD=13.6%) and post-test (M=96.0%, SD=8.4%) (t(27) = -3.29, p=0.003). Specifically, there is a significant increase in the mean knowledge score after the intervention was conducted.

**Discussion**

The purpose of the current study was to evaluate an educational intervention on undergraduate nursing student’s perceptions and knowledge of organ donation. The goal was to determine if education would not only change participant’s views but see if education would increase the number of participants who would want to register as an organ donor. A positive finding of this study was that there was indeed an increase in the number of people who would register as an organ donor post educational intervention. A
very beneficial finding as the need for more registered organ donors is a probable solution to closing the gap on supply and demand of human organs.

With one educational intervention experienced by the undergraduate nursing students there was a noticeable difference in the knowledge and perceptions about organ donation from the participants. Not only did their knowledge of basic facts increase but it was statistically significant ($p=0.03$). Perceptions on organ donation also increased through more participants becoming more likely to register to be an organ donor and also, the participants were more likely to not only talk to their families about organ donation but they were also more comfortable talking with their patients. This is a positive increase, as with education, knowledge was not only better but the participants were able to retain the knowledge prior to taking the post test. With a more positive perception and outlook on organ donation; these participants may help increase the supply of solid organs and decrease the number of people waiting for a transplant.

Knowledge of organ donation is a significant barrier to increasing the number of organ donors and lowering the number of people waiting for an organ transplant. Evidently, with education, organ donation knowledge can be increased. This study suggests that more education should be incorporated into undergraduate nursing programs. Early education in regards to organ donation is essential for undergraduate nursing students. As America’s future nurses, more education can create more positive perceptions of organ donation and thus lead to changing the minds of the rest of the population.
Limitations

This study had some limitations including a relatively small sample size. Additionally, the sample size was homogenous and limited to only one college with a nursing school in Western New York, limiting generalizability. Also, there is the possibility that the nursing students did not fully participate in the educational intervention or they may have chosen to obtain information from outside sources. It would be beneficial to perform the pre-test, educational intervention, and post-test live instead of via the internet. This would increase the sample size as the surveys and intervention would be live and there wouldn’t be a dependence on participants to take the initiative to participate. By having a live presentation, it would limit the potential for extraneous variables affecting the educational outcome. Lastly, a possible limitation of the study is the time in which it was initiated. It was imperative that the educational intervention was established in the month of April as it was Donate Life month; however the beginning of May is when the undergraduate nursing students have finals week, thus limiting their concentration on the study but more towards their academics.

Conclusion

The findings indicate that a majority of nursing students have a great amount of baseline organ donation knowledge in regards to misconceptions and facts and shows to have increased with the provided education. Results exhibit that not only does the nursing student’s knowledge increase, but the comfort level of expressing this knowledge to their patients and their own families also increases. The application of organ donation education within the undergraduate nursing curriculum proves to be beneficial. Undergraduate nursing students will be more prepared to successfully answer questions
in regards to organ donation when asked. Nursing students are the world's future nurses and it is imperative that they are fully prepared for any question that is brought to their attention.
References


Rykhoff, M., Coupland, C., Dionne, J., Fudge, B., Gayle, C., Ortner, T., Quilang, K., Sawany, F., & Wrobleska, M. (2010). A clinical group's attempt to raise awareness of organ and tissue donation. *Progress In Transplantation, 20*(1), 33-39. DOI: 10.7182/prtr.20.1.g72751q64l63g7w5


Appendix A

Table 1: Sample Characteristics (N=28)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>26 (92.9)</td>
</tr>
<tr>
<td>Male</td>
<td>2 (7.1)</td>
</tr>
<tr>
<td>Organ Donor</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>17 (60.7)</td>
</tr>
<tr>
<td>No</td>
<td>11 (39.3)</td>
</tr>
<tr>
<td>Age in years: M (SD)</td>
<td>24 (5.5)</td>
</tr>
</tbody>
</table>

Table 2: True/False Questions

<table>
<thead>
<tr>
<th>Questions</th>
<th>Pre-test percentage</th>
<th>Post-test percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Everyone who needs an organ transplant is able to obtain one</td>
<td>93%</td>
<td>96%</td>
</tr>
<tr>
<td>When asked, more than 70% of the population will consent for organ donation</td>
<td>64%</td>
<td>79%</td>
</tr>
<tr>
<td>Approximately 79 people receive an organ transplant per day</td>
<td>82%</td>
<td>100%</td>
</tr>
<tr>
<td>It costs money in order to donate your organs</td>
<td>86%</td>
<td>96%</td>
</tr>
<tr>
<td>One person has the ability to save up to 8 lives by donating their organs</td>
<td>96%</td>
<td>100%</td>
</tr>
<tr>
<td>The most commonly donated organs include the heart, kidneys, lungs, liver, and pancreas</td>
<td>93%</td>
<td>100%</td>
</tr>
<tr>
<td>An open casket isn’t possible if you donate your organs</td>
<td>93%</td>
<td>100%</td>
</tr>
<tr>
<td>Rich and famous people are put on the UNOs waiting list first</td>
<td>96%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Organ Donation Education and its Effects on Undergraduate Nursing Students' Knowledge and Perceptions

Jessica D'Acquisto BS, RN

Supervised by:
Dr. Christine Nelson-Tuttle DNS, APRN, PNP-BC

Introduction

- Educating future nurses about organ donation and shaping their positive attitude towards donation is a strategy to reduce disparity between the number of donors and the number of transplant candidates (Ezzan, 2014)

- It is well known that the demand for solid organs well exceeds what is available to the population. An increased supply of organ donors has the possibility of correcting this gap. Each person's knowledge, attitudes, and perception of organ donation affect donor rates. (Ryksol et al., 2010)

- There are a variety of different reasons as to why the general public may or may not support organ donation. Allusions were made as a factor of supporting organ donation because people wanted to give the gift of life to another person and give them a second chance at better health (Simensoff, Mercer, Graham, & Berant, 2007).

Purpose

- To evaluate the effects of an educational intervention on undergraduate nursing students' knowledge, perceptions, and the potential of them registering as organ donors.
- **Hypothesis #1:** The participating undergraduate nursing students will have an increase in knowledge after the Power Point and podcast presentation.
- **Hypothesis #2:** There would be an increased interest in becoming a registered organ donor after the educational intervention.

Methodology: Sample

- Convenience sample of undergraduate nursing students from St. John Fisher College's Wegmans School of Nursing
- Participant inclusion criteria:
  - Full time undergraduate nursing students
  - At least 18 years of age
- N= 28 participants (92.9% female and 7.1% male)
- Mean age of the sample was 24 years old
- 60.7% currently registered organ donors
- Performed in April 2017: Donate Life Month

Methodology: Pre-test Post-test

- Quantitative and descriptive in nature
- Pre-test, educational intervention (Power point with Podcast), and Post-test distributed via email to St. John Fisher College undergraduate nursing professors who distributed to their students
- Pre-test and post-test surveys created in Qualtrics included:
  - Demographic questions
  - 8 true/false questions to assess organ donation knowledge
  - 5 Likert style questions to assess perceptions and comfort level of organ donation knowledge

Methodology: Data Analysis

- SPSS 24
- Descriptive analyses of means, frequencies, and percentages calculated for demographic characteristics and survey responses
- Chi-square analysis (x²) was performed on the 5 Likert style questions to determine the strength of the association between pre-test and post-test answers
- A paired samples t-test was conducted to compare the mean scores of knowledge from pre and post test.
Results

- Knowledge of basic organ donation facts:
  - Mean pre-test score was 87.5% (SD = 13.6%)
  - Mean post-test score was 95.9% (SD = 8.4%)

- Likelihood of becoming a registered organ donor:
  - Pre-test results: 21 participants (75%) were extremely likely or somewhat likely to register as an organ donor
  - Post-test results: 26 participants (89%) were extremely likely or somewhat likely to register as an organ donor

Discussion

- With just one educational intervention there was a noticeable increase in organ donation knowledge of undergraduate nursing students
- Another positive finding of the study was that there was an increase in participants who would register as an organ donor post educational intervention
- Participants' comfort level of talking to their own families and patients about organ donation increased post intervention

Implications

- Research:
  - Further research is needed to understand the public's barriers for registering as organ donors
- Education:
  - There are numerous educational strategies used with medical students including didactic elective courses, use of standardized patients, clinical electives with a surgical procurement team, and discussion boards (Kuru, 2014). It should be explored if these strategies could be adapted and included into the curriculum of undergraduate nursing students.
  - Education on the facts and benefits of organ donation is important for patients and the public to understand and further dissemination for the public should be explored

Dissemination

- Submit manuscript to the *Journal of Progress in Transplantation* with the hope of inspiring program directors to increase organ donation education within their undergraduate nursing programs so that future nurses can teach their patients and the public about the benefits and importance of organ donation.

References

| Purpose: | The purpose of this study was to discover the factors associated with the decision to donate among families of potential organ donors. The researchers had a few goals of their research which included; assessing the determinants of families’ willingness to donate solid organs, to describe the process and content of the conversations surrounding the donation request, and to evaluate the correlation between these factors and the consent rate. |
| # of subjects: | The study took place in 9 trauma hospitals in southwestern Pennsylvania and northeastern Ohio. The subjects involved in this study included family members, health care practitioners, and organ procurement organization staff involved in the donation decision for 420 donor eligible patients and 481 family members/significant others. |
| Sample Characteristics: | In total, there were 11,555 records reviewed and out of those records, 741 cases were potential solid organ donors. Requests for donation were made by health care providers or the organ procurement organization staff members and in turn 596 families consented. However, the study is only based off of 420 cases. Patients were predominantly male (60.1%), white (85.6%), and the mean age was 40.5 years. Family members and significant others who were invited to participate in the study had to be at least 18 years of age. These members also had to have been identified in the patient’s chart as being involved in the decision about donation by a health care professional or organ procurement organization staff member. There were 481 eligible family members and significant others. Family members were predominately female (66.4%), white (84.6%), and averaged 44.7 years old. |
| Year Data was Collected: | Data was collected from January 1994 through December 1999. |
| Study Design: | This study is a quantitative research study. Health care providers or organ procurement organization staff members interviewed eligible family members regarding organ donation. Interview questions and answers were used to figure out the top factors that lead family members to consent or not to organ
### Data Collection Method:
Data collection was obtained by structured interview. About 2-3 months after the patient’s death, letters were sent home to family members, which were then followed up with phone calls from a trained research assistant extending an invitation to participate in the study. There were three parts to the interview. The first part of the interview was an open ended description of the events that immediately followed the patient’s death. The second part involved a series of structured and semi-structured questions about the donation request. The third part of the interview was a series of structured questions to measure the family member’s attitudes and knowledge about organ donation. The interview questions were based on past research and theoretical considerations. Interviews were audiotaped, transcribed, and coded.

### Data Analysis Method:
Univariate analysis and multivariable analysis were both used. Univariate analysis revealed numerous factors associated the donation decision. Multivariable analysis revealed that family and patient socio-demographics and prior knowledge of the patient’s wishes were significantly associated with willingness to donation. Variables constituting factors included in this analysis included pre-request variables, family understanding of brain death and treatment, socioemotional and communication process variables, who raised the issue of donation and spoke to family, organ procurement organization request related variables, topics discussed with family, and timing of donation request. The Wilcoxon rank sum test was used for interval or ordinal scale variables.

### Findings:
There were 420 eligible donor patients in this study and a total of 238 led to organ donation; 182 cases did not lead to organ donation. Families of younger white pales were more likely to consent to organ donation. However, consent was also associated with deaths due to trauma compared with non trauma related deaths (65.1% vs 34.9%). Family members who reported positive beliefs about organ donation and patient’s who had prior knowledge of the patients’ wishes regarding donation were more willing to consent to organ donation. No association was found between the decision to donate and the hospital environmental variables. There was also no association between when the donation request was first made and consent...
Jessica D'Acquisto  
Lit Matrix #1: Factors leading to organ donation consent

<table>
<thead>
<tr>
<th>Rates. If a family member was willing to donate their organs/were already an organ donor; there were more willing to consent for organ donation of the patient. Families were more willing to donate if they were prepared that a consent request will be made.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implications:</td>
</tr>
<tr>
<td>It should be a standard to have an organ donation organization representative involved with all potential donor cases. Based from the study the time spent with one of these coordinators was a strong factor associated with the decision to donate. This could make the request process easier and less confusing on family members. Educating people better on what organ donation is and the request process of organ donation could lead to even better consent rates.</td>
</tr>
<tr>
<td>Strengths/Weaknesses:</td>
</tr>
<tr>
<td>A weakness of this study included where the study was performed. The location of southwestern Pennsylvania and northeastern Ohio does not suggest for a wide range of different ethnicities. The number of organ procurement staff members involved in the study was too small in order to characterize aspects of successful requests. The study relied on health care professionals and families’ recollections or the donation request which may have involved some recall bias. Also, the year that data was beginning to be collected in 1994- Pennsylvania passed a similar legislation of requiring hospitals to notify a local organ procurement organization of imminent deaths. Ohio did not pass this legislation at that time.</td>
</tr>
<tr>
<td><strong>Citation:</strong></td>
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<tr>
<td>-----------------</td>
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<tr>
<td><strong>Purpose:</strong></td>
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<tr>
<td><strong># of Subjects:</strong></td>
</tr>
<tr>
<td><strong>Sample Characteristics:</strong></td>
</tr>
<tr>
<td><strong>Year Data was Collected:</strong></td>
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<td><strong>Study Design:</strong></td>
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**Data Collection Method:** Data were collected from a database of all potential organ donors maintained by the Texas Organ Sharing Alliance organ procurement organization. Some approaches were done before declaration of brain death, particularly if the family is interested in withdrawal of care before brain death declaration.

**Data Analysis Method:** The decline and consent groups were compared by univariate analysis for all variables using the unpaired Student t test or Mann-Whitney rank-sum test for the continuous variables. Pearson’s X² with Yates correction for categorical variables. Variables with a p value < 0.20 were entered into the multivariate analysis. Logistic regression identified race, older age, and death from a medical cause as independent risk factors for failure of obtaining consent.

**Findings:** Family members of minority populations, medical brain deaths, and older potential donors more often decline consent for organ donation. Delayed family approach by an organ procurement organization member seems to be associated with decreased consent rates. Findings from the 827 potential donors were split into consent (n=471) and decline (n=356) groups. There were 471 families (57%) that consented to organ donation and 356 families (43%) declined to consent. There was a noticeable difference between ethnicities for whether or not families consented or not. Approximately 237 Hispanic family members (67%) declined to consent for organ donation, while approximately 237 (50%) Caucasian family members consented to organ donation.

**Implications:** Educated and resource utilization toward these specific populations may improve organ donation consent rates.

**Strengths/Weaknesses:** Strengths include that there was a larger sample size for the study and there was a variety of ethnicities present in the sample. A weakness is that the research was only conducted in Texas. Limiting generalizability to the rest of the population.
| Purpose: | The objective of this study is to examine the reasoning behind donation decisions of donor eligible patients' next of kin. The study attempts to understand the underlying rational for decisions to donate or not donate organs to examine whether the emphasis on altruism in the current procurement system maps onto ordinary American's motives for donating. |
| # of Subjects: | There were 596 family members that qualified to be a part of the study. Of the 596 family members, 420 members were willing to participate in the study (70%); which included 420 patients. Family members were then categorized as either consenting to organ donation (239 family members) or declining to consent (181 family members). |
| Sample Characteristics: | There were a total of 420 family members and 420 patients involved in this study. There were more female family members (n= 274) than male family members (n= 146). There were significantly more white family members (n= 355) than non-white family members (n= 65). All family members were required to be adults and they had to have played a role in the donation decision in order to be included. The mean age of the family member respondents is between 44-45 years. There were 249 male and 171 female patients involved in the study. The average age of the patients whose family members consented to organ donation was 37 years. The average age of patients whose family members decline organ donation was 44 years. |
| Year Data was Collected: | The study did not mention when data were collected. |
| Study Design: | This study design is considered to be a qualitative research design. Cases were identified through chart review at hospitals in Ohio and Pennsylvania. After charts were reviewed and patients were selected, their family members were interviewed in order to understand the decisions regarding organ donation. The study presents a fine grained analysis of the reasons that motivate donation decisions. |
| Data Collection Method: | Data was collected from 9 trauma hospitals (including two pediatric hospitals) located in Southwest Pennsylvania and Northeast Ohio. Data was collected through identification of all possible organ donor eligible patients on the basis of a detailed chart review of all deceased patients. Data collection through
audiotaped telephone interviews with health care providers and organ procurement organization staff. Audio-taped, in person, comprehensive interviews with family members who were involved in making the decision and transplantation and the reasons for their donation decisions. All adult family members/significant others who played a role in the donation decision were invited to participate in the study. Letters were sent to families between 2-3 months after the patient’s death, and were followed by a telephone call from a trained research assistant. Families who agreed to participate were schedule for in person interviews. The family interview consisted of three parts: an open ended description of the events immediately surrounding and after the patient’s death, a series of structured and semi structured questions that further elicited and systematically collected data on the quality, quantity, and types of interactions the family had; and a series of structured questions designed to measure family members’ attitudes and knowledge about donation and transplantation and to obtain socio-demographic information.

**Data Analysis Method:**
All analyses were performed using SPSS software. Measures of association include the X² test, as appropriate to the level of measurement to evaluate how family and patient characteristics are associated with donation decision reasons. Relationships among the reasons for consent or refusal to donate were examined using Pearson correlation matrices. A multivariate logistic regression was performed to relate the relative contributions of patient and family characteristics to reasons for consent or refusal. Logistic regression analyses were performed to examine the reasons for and against organ donation. All relevant variables were included in the multivariate models based on the initial bivariate analyses.

**Findings:**
When comparing the characteristics of patients, those whose organs were donated were more likely to be white (92% vs 75%); male (65% vs 51%), and younger (mean age of 37 years vs 44 years). More family decision makers who refused to donate had incomes of less than $25,000 (45% vs 34%). The most frequently stated reason for donating was altruism- the desire to help others through organ donation. About 75% of family decision makers decided to donate because the family had explicit knowledge of the patient’s desire to donate or because they were confident that this would have been the patient’s preference. Other common responses included the family having positive attitudes towards donation; that donation was a strategy for coping with the patient’s death, and the belief that the patient no longer needed his/her organs. About 90% of the family members gave more than one reason as to why they decided to donate. Altruism was combined most frequently with knowledge of patient’s wishes to
donate. A reason why family members (51%) decided to not donate includes the belief that the patient would not have wanted to donate. Another reason included the general belief that the patient and the family had been through enough and therefore could not tolerate the organ donation process (44% of responses). About 43% of family members refused to donate because they were concerned that donation would disfigure the body and/or preclude an open casket funeral. Other refusal reasons included mistrust in the health care system, incorrect determination that the patient was medically ineligible for donation, family disagreement, and the decision to terminate mechanical supports. Non-donor family members were more likely than donor families to have a single reason for their decision to not donate.

### Implications:

Polls in the United States have consistently reported that upwards of 85% of the American public express a willingness to donate, yet no more than 50% of those donate when the situation arises. This study did not find any significant differences between the reasons minorities and non-minorities gave for their decisions, although minorities tended to express greater mistrust of the health care system- this trend was not statistically significant. Continuing to educate the public concerning the value, rather than just the need, of organ donation should be a priority. Education on organ donation is pivotal in order to increase consent rates.

### Strengths/Weaknesses:

An advantage of this study was that the reasons to donate or not was elicited from families in an unbiased way without assuming or suggesting to respondents motivations for their behaviors. Limitations included having only a few Hispanic or Asian respondents- the majority of minority respondents were African American. The sample may not have been big enough to detect more than trends. Another limitation included not asking family member responders to rank their reasons nor to assign them a weight of importance. A strength of this study is that the study did not impose categories on respondents but let them speak for themselves.
## Citation:

## Purpose:
The purpose of this study is to identify reasons for lower organ donation rates by African Americans, we examined knowledge and attitudes about brain death, donation, and transplantation and trust in the health care system.

## # of subjects:
Data were collected from 1,283 subjects in Ohio. Adults were randomly selected in the household by selecting the adult who most recently had a birthday. The participation rate was 60%.

## Sample Characteristics:
The study was conducted in Ohio where residents’ racial, age, educational, and economic characteristics are very similar to those of the U.S population as a whole. Ohio residents who participated in this study were required to be an adult- at least 18 years or older. Compared with white respondents, African American respondents were younger (man age 40.7 vs 44.8) and were most likely to be women (77.2% vs 64.8%). White respondents were more likely to have a college education (30.8% vs 14.4%) and were more likely to have incomes in excess of $50,000 (42.2% vs 20.1%). African Americans were more likely to be Protestant (77.8% vs 57.0%) and reported higher levels of religiosity.

## Year Data Was Collected:
Interviews of Ohio residents 18 years or older were conducted from June to August of 2000.

## Study Design:
This study is a qualitative research study design. Dependent variables include having a signed donor card or checking the donor option on his/her driver’s license, stated willingness to donate their organs, and willingness to donate a loved one’s organs after death. Responses were reported at yes or no. The primary predictor of interest was ethnicity (white vs. African American). Also included were socio-demographic characteristics- gender, education, income, age, and religiosity.

## Data Collection Method:
Data were collected from 1,283 subjects in Ohio using a random digit dial telephone survey. Items were developed based on focus group results. Willingness to donate indicators included a signed donor card and willingness to donate one’s own and a loved one’s organs. General
Attitudes toward organ donation were assessed by asking individuals to rate their agreement on 7 items using a four point Likert scale ranging from: strongly agree to strongly disagree.

**Data Analysis Method:**
Descriptive statistics were generated for all items. Measures of association for ordinal and categorical data were assessed using the chi-square statistic, while t tests assessed continuous variables. Researchers compared the bivariate relationships between ethnicity and all other predictors and the 3 dependent variables. The multivariable logistic regressions performed were stratified by ethnicity, using socio-demographics, general attitudes toward donation, attitudes toward the health care system, and knowledge of brain death as predictors of the 3 donation decision outcomes.

**Findings:**
Compared with whites, African Americans were more likely to favor benefits for organ donation—families should be given money for donating (45.6% vs 28%) or provided money to pay for funerals (63.1% vs 46.6%). African Americans also had less trust in the health care system compared with whites. African Americans were less likely to agree that when patients are eligible to donate organs, doctors can be trusted to pronounce death correctly (68.2% vs 82.9%). Among African American respondents, predictors of agreeing to donate a loved one’s organs were greater trust in the health care system and being less likely to agree that families should be allowed to donate organs to a particular person. Among white respondents, predictors of agreeing to donate a family member’s organs included agreeing that there should be a law that everyone donates unless someone says no and being more likely to agree that hospitals do not need to ask the family’s permission to donate the organs of patients with signed donor cards. Compared to the white population—African Americans are less willing to donate their own or a family member’s organs. African Americans expressed greater concerns about the trustworthiness of the health care system and were more likely to want to see the organs that they give go to other African Americans.

**Implications:**
National efforts directed at improving overall trust in the health care system among African Americans will go a long way to improve organ donation and transplantation in African Americans.

**Strengths/Weaknesses:**
Responses to projective questions are subject to a certain amount of inaccuracy, especially when they ask subjects to project responses to situations that are unfamiliar—such as
requesting consent for organ donation. The sample size was designed so that the margin of error was small (+/- 4%). Additionally, the state of Ohio is generally representative of the United States, although the study did not include appreciable numbers of Hispanics or Asian Americans. The design of the study was strengthened by the use of qualitative methods to structure the interview instrument.
Jessica D'Acquisto  
Lit Matrix #5: Factors of Organ Donation Consent

| **Citation:** | Siminoff, L. A, Lawrence, R. H. (2002). Knowing patients’ preferences about organ donation: Does it make a difference? The Journal of Trauma Injury, Infection, and Critical Care, 53(4), 754-760. DOI: 10.1097/01.TA.0000030052.69240.4F |
| **Purpose:** | The purpose of this study was to examine in detail the impact of knowledge of a donor-eligible patient’s preferences on organ donation decisions. |
| **# of subjects:** | Study sites for this research took place at 9 trauma hospitals located in southwest Pennsylvania and northeast Ohio. All patients eligible to donate solid organs were included in this study. All adult family members and significant others who played a role in the donation decision were invited to participate in the study. Of the 11,560 medical records that were reviewed, 741 (6.41%) of the cases were potential solid organ donors. Requests for donation were made of 596 families (80.43% of the potentials), resulting in 283 donations (47.48%). Interviews were obtained from 73.51% of family decision makers, representing 420 patient cases. There were 60 cases excluded from these analyses- for a total of 360 patient cases. |
| **Sample Characteristics:** | Only patients 16 years of age or older were included for these analyses. This age was used because it is the minimum age for obtaining a driver’s license and because it is an age when minors are more able to express opinions pertaining to personal, medical, and other decisions. As a result, 60 cases were excluded from these analyses- for a total of 360 patient cases. The sample of patients was mostly male (59.44%), predominantly white (85%), and had a mean age of 45.4 years (range 16-86 years). The family decision makers were predominantly female (64.72%), white (84.72%), married (67.78%), and ranged in age from 18-82 years (mean age of 46.5 years). |
| **Year Data Was Collected:** | Data were collected between the years of 1994 and 1998. |
| **Study Design:** | This study is a qualitative research study design. Independent variables included family knowledge about patient’s wishes and patient/family socio-demographics. Socio-demographic information that were collected included age, gender, family’s religion, marital status, education, and income level. Dependent variables included the decision in regards to donation (the final outcome |
reflected the decision to donate or refuse to donate) and satisfaction with the decision. Information was obtained to see if family members were satisfied or dissatisfied with their decision about whether or not to donate the patient’s organs.

| Data Collection Method: | Data collection included identification of all possible organ donor eligible patients on the basis of a detailed chart review of all deceased patients; audiotaped telephone interviews with all health care providers and organ procurement organizations who spoke with donor eligible patients’ families about organ donation; and audiotaped, in person, comprehensive interviews with family members who were involved in make the decision about organ donation. Data came from chart review of all dead patients and interviews with family members involved in the decision process- 360 patients. Letters were sent to families 2-3 months after the patient’s death from a trained research assistant. Families who agreed to participate were scheduled for in person interviews. Interviews consisted of three parts. The first part was an open ended description of the events before and after the patient’s death. The second part of the interview included structured and semi-structured questions that elicited the types of interactions that the family members had with hospital care providers, the sequence of the requests, families’ decisions, and the reasons/consequences of those decisions. The third part of the interview was a series of structured questions designed to measure family members’ attitudes and knowledge about donation and transplantation. |

<p>| Data Analysis Method: | Descriptive statistics are reported to summarize the overall patterns regarding family knowledge about the patient’s wishes along with bivariate relationships between patient and/or family characteristics and the items measuring knowledge about the patient’s wishes. The bivariate relationships between the items assessing knowledge about the patient’s wishes and the dependent variables are presented, along with a multivariate analysis evaluating the relative contributions of knowing the patient’s preference and family and patient characteristics in understanding the two outcome variables: donation decision and satisfaction. Several measures of association were used to match the measurement levels of the data, including the X2 (likelihood ratio), t test, analyses of variance, and the Mann-Whitney U test (we present the corresponding z score), as appropriate. Logistic regression was used for the multivariate analysis. All analyses were performed using |</p>
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<th>Findings:</th>
<th>In general, increased likelihood of donating was associated with families knowing the patient wished to donate, knowing the patient had a donor card, considering how the patient might have felt about donation, having enough information, and having discussed donation. A little more than half of the families (52.50%) had to guess what the patient would have wanted to do about organ donation. Approximately 74% of family members knew the patient wanted to donate and approximately 26% stated the patient did not want to donate. More families refused to donate when they knew the patient’s wishes were to not donate compared with those who knew the wishes were to not donate (95.55% vs 10.24%). Those who did not know the patient’s wishes were more likely to refuse than to donate (54.40% vs 45.50%). The most common reasons for not donating included disfigurement and burial issues (66.7%), feeling too overwhelmed emotionally and surprise at being asked about donation (58.3%), the process taking too long (50%), and a feeling that the patient has been through enough (50%).</th>
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<td>Implications:</td>
<td>Everyone should be educating their family members on what they want; what their wishes are. If more people expressed what they wanted in terms of organ donation and hospital stays then family members could have more confidence with their decision of consenting to organ donation or not. When families have knowledge about the patient’s wishes- it helps make it easier for families to decide to consent for donation or not.</td>
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<td>Strengths/Weaknesses:</td>
<td>A weakness of this study includes the location of where the study was performed. It is harder to generalize for the entire population based off of this sample population when there aren’t a wide variety of ethnicities located in the northeast region of the United States. A strength of this study includes the length of time that data were collected. Data were collected over 4 years so the researchers were able to obtain a lot of information instead of having a limited research time span. An additional strength was that the researchers had an adequate number of family members who had agreed to participate through the full study.</td>
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Jessica D’Acquisto  
Lit Matrix #6: Factors of Organ Donation Consent

| Purpose: | The primary purpose of this study is aimed to identify the factors associated with family consent or non-consent for organ donation. |
| # of subjects: | There were a total of 123 patients included in this study. Family members of these potential donors were also involved in the research. This study included all potential donors including those with confirmed or suspected brain death and imminent brain death. |
| Sample Characteristics: | There were 123 potential donors identified for inclusion in this study. This study recruited 100% of potential donors where family was consulted from participating hospitals during the study period. Sample size was determined by the desire to interview a subsample of cases meeting more stringent inclusion criteria (e.g., English speaking) in both the consent and non-consent arms of the associated qualitative study until saturation of themes was reached. Of the 123 potential donors, 53 were female (43.1%) and 70 were male (56.9%). Approximately 60.2% of the potential donors were born in Australia. Also, 35% of the sample was not religious or atheist. |
| Year Data Was Collected: | Prospective data on deceased donors and potential donors were collected from four sites in Melbourne, Australia between April 2012 and September 2013. |
| Study Design: | This study design is a quantitative research study. Cases were identified through chart review of deceased patients at 4 different Melbourne, Australia hospitals. There were 123 patients selected to be included into the study. Families were contacted and an interview was conducted with the family members. Also included were socio-demographic characteristics—gender, cultural background, and religiosity. |
| Data Collection Method: | At each site, a nurse or medical donation specialist collected and reviewed data of deceased patients to identify potential organ or tissue donors for the Australian Organ and Tissue Authority. Research staff collected data from patient’s charts at four different hospitals in Australia and through family interviews. Participants were categorized in to multiple donor categories: potential donor, actual organ donor, intended donor, |
planned DCD donor, and non-consent (organ donation declined/refusal). Data about potential donors were collected from inner city hospitals in Melbourne, Australia.

**Data Analysis Method:** Data were exported to SPSS 22.0 and characteristics of potential donors were compared for two outcome measures: 1. family consent and 2. whether those for whom consent was obtained proceeded to organ retrieval. The researchers used independent samples median test for continuous variables without a normal distribution, and Chi-squared or Fisher's exact tests for categorical variables. For all inferential analyses, alpha was set at 0.05 and two-tailed tests of significance were used.

**Findings:** In total, 123 consecutive potential organ donors were identified for inclusion in the study, including 42 organ donors, 12 intended donors, 11 planned DCD donors and 58 non-consent potential donors (whose families declined consent for donation). The consent rate was 52.8% (65/123) in this study. Data relating to religion showed that families of potential donors who affiliated with a religion other than Christian were less likely to consent. Research also showed that family members who speak English were more likely to consent to organ donation (59%) than people who did not speak English (12.5%). Approximately 70% of families consented to organ donation when they were aware that it was the patient’s wish to donate. An additional result of this study also showed that if a patient was registered on the organ donor registry - their family member consented to donation 100% of the time. Family-related factors included being English speaking and having knowledge of the deceased’s wishes about organ donation. Among consented potential donors, those eligible for donation after brain death and with a shorter length of stay were more likely to proceed to donating organs for transplantation.

**Implications:** The data obtained from this study can guide further research into consent and non-consent to organ donation among families of potential donors in Australia and further inform health professionals responsible for donation-related processes and conversations with families and those involved in community education, potentially improving consent rates. The research shows how important it is for people to express their wishes and plans for the future.

**Strengths/Weaknesses:** A weakness of this study includes how small the sample size is. Since the sample was small it may have been underpowered to detect small differences between groups. Also, due to the small sample size and lack of various ethnicities it would be hard to generalize the findings outside Australia and compare to the rest of the world.
Jessica D’Acquisto  
Lit Matrix #7: Factors of Organ Donation Consent

| Purpose: | The primary aim of this study was to further examine factors that may be relevant in next-of-kin decisions by comparing those who agreed to donation with those who did not along several relevant dimensions, including deceased and next-of-kin characteristics, requestor characteristics, communication processes and satisfaction with the health care team. |
| # of subjects: | Study participants included 285 next-of-kin members (147 donors, 138 non-donors) in Gainesville, Florida. |
| Sample Characteristics: | There were a total of 285 next of kin participants in this study. Next-of-kin participants had a mean age of 49.3 years (±13.2 years), and were predominantly female (80%). Next of kin races included 78% white, 16% black, 4% Hispanic, and 2% other. Approximately 55% of the next of kin members were married, 77% were college educated, and 59% were employed. Their relationship to the deceased was as follows: spouse (36%), parent (26%), adult child (21%), sibling (10%) and other (7%). Deceased patients had a mean age of 46.1 years (±16.3 years), and were predominantly male (56%). Races of deceased patients included 78% white, 15% black, 4% Hispanic, and 3% other. Of the deceased patients; 56% were not married, 65% had less than a college education, and 59% were employed at time of death. |
| Year Data was Collected: | Data were collected during a 4 year study period; from July, 2001 – February, 2004. |
| Study Design: | This study design is a qualitative research design. Independent variables included in this study are next of kin socio-demographics and whether or not next of kin had knowledge about the patient’s wishes. Socio-demographic information obtained in the study includes age, gender, race, marital status, education level, and relationship. Dependent variables of this research study include consenting or refusing to consent for organ donation and the factors that lead to the next of kin’s decision about organ donation. |
| Data Collection Method: | Following the donation decision, an Organ Procurement Organization coordinator unaffiliated with the study gave the
next-of-kin or legal surrogate a study information card, along with other informational handouts that are routinely distributed to families approached about organ donation. This card contained information about the study’s purpose, the inclusion criteria and likely time commitment, how to indicate interest in the study and monetary reimbursement ($75.00). The researchers chose this method of recruiting because it did not interfere with the donation request and decision-making process. Four hundred fifty-six (219 donors, 237 nondonors) next-of-kin received the study information card. This represented 67% of the 680 next-of-kin the OPO approached about donation during the study period. Of the 456 who received study information, 312 (68%) made inquiries regarding study participation and 285 interviews were conducted by telephone. A majority (76%) of interviews were done within 4 weeks of the donation decision. The telephone interview was semi-structured and lasted approximately 42 minutes. The researchers believed that interview data collected in close proximity to the event in question would be most reliable and less influenced by memory and decision justification processes over time. The researchers did not exclude any next-of-kin from study participation if they called more than 1 month after the donation decision.

**Data Analysis Method:**

Interview responses were recorded on the data collection tool developed for this study and coded based on the response options for each of the questions. All data were entered and analyzed using SPSS. Univariate relationships between the questionnaire items and the next-of-kin donation decision (donation or refusal) were examined using t-tests for continuous variables, the Fisher’s exact test for variables with 2 categories or a 2-tailed chi square test for variables with 3 or more categories. Individual interview questions were grouped into 5 conceptual domains: deceased’s characteristics, next-of-kin characteristics, requestor characteristics, communication processes and overall satisfaction with the deceased’s health care. Logistic regression analyses were then conducted to examine the predictive relationship between modifiable variables that were statistically significant in the univariate analyses and the next-of-kin donation decision, while controlling for non-modifiable demographic characteristics.

**Findings:**

Next-of-kin who were white (57.5%) and employed (58.6%) were significantly more likely than non-whites (31.2%) and those not working (41.4%) to consent to donation. Relationship to the deceased was also significant, with
parents (65.8%) and adult children (52.5%) more likely to donate than spouses (43.3%) and siblings (42.9%). An expressed intention to be an organ donor was strongly associated with the decision to donate, whether that intention was in the form of a driver’s license designation, a signed donor card or a discussion with others. Next-of-kin with more favorable attitudes toward organ transplantation and donation were more likely to consent to donation. Those who consented to donation had significantly more favorable beliefs about organ donation at the time of their loved one’s death than those who did not donate. Also, 70.5% of next-of-kin that had complete knowledge of brain death agreed to donation, compared to only 29.2% of those with incomplete or inaccurate knowledge of brain death. Donation was more likely when an OPO coordinator (72.2%) or a family member (74.0%) first mentioned it, rather than when it was first raised by a physician, unit nurse, social worker or hospital clergy/chaplain (34.2%). The total model is statistically significant and predicted the next-of-kin donation decision in 92.7% of the cases. Younger donor age, white race, knowing the donation intentions of the deceased, organ donation beliefs that are positive, OPO personnel asking for donation consent, high levels of requestor sensitivity and perceptions that the timing of donation discussion was right were all significant predictors of consent for donation. Next-of-kin were less likely to donate when the deceased’s donation intentions were unknown (26.7% vs. 73.3%). When donation intentions are not known, the decision is more likely to be influenced by other variables and consent will not be obtained in the majority of these instances.

**Implications:**
If not used already- organ procurement organizations should be used in all hospitals. With these findings it is indicative that there could be higher consent rates when family members are approached by these members instead of other professionals about organ donation. Organ procurement organization professionals are more knowledgeable about the process of organ donation and the families could feel more comfortable with asking them questions in regards to organ donation. The population should also express their wishes to their next of kin. This way these family members can have more confidence in their decision of consenting or refusing organ donation- because it was what the patient wanted.

**Strengths/Weaknesses:**
A weakness of this research study includes the selection bias used for their recruitment strategy. Those who chose to participate in the study may have been more favorable toward organ donation, had a higher need to discuss their
experience (positive or negative), highly motivated to participate in research, and/or more emotionally ready to talk about the recent death of a loved one. Another weakness is that all the data obtained is based entirely on the experiences of families in one region of Florida. Since the data is limited to one area it is harder to generalize the findings to the rest of the population. Lastly, the researcher’s protocol attempted to reduce memory biases but they did rely on next-of-kin self-report in acquiring these data.