The author reports on a study of nurse anesthetists that he conducted to determine what role their feelings of empathy, sympathy, sorrow and joy play in the care of the organ donor/cadaver/patient. With the increasing awareness of the need for organs for transplantation, the author cautions that the anesthetist may be confronted with these attitudes on a more frequent basis.

The definition of death is a controversial issue in our society today. When is a person really dead? Is it at organ death or at brain death? The legal definition of death as found in Black's law dictionary is "the cessation of life; the ceasing to exist; defined by physicians as a total stoppage of the circulation of the blood and cessation of the animal and vital functions consequent thereon, such as respiration, pulsation, etc." 1

The medical definition of death is not so easily defined, but it parallels the legal definition to some extent. The brain-oriented concept of death developed from a need to decide whether a person was dead when his brain ceased to function or when all major organs permanently ceased to function. The importance of this concept arose not only with the development of organ transplantation, but also because of the concern not to prolong biological life when personal life had ceased. 2

The nurse anesthetist is often faced with the task of maintaining organ systems in a patient with a "brain-dead" body. Some anesthetists have had difficulty dealing with this task and at times, have found it extremely upsetting to remove the life forces, such as respirators and IVs, from the body. The purpose of this study was to determine the attitudes of anesthetists who deal with cadaver organ donors versus those who are not involved with cadaver organ harvest, and what role their feelings play in patient care.

The concept of brain death

There is a definite lack of supporting articles dealing with the topic of brain death in the literature today. The controversy over brain versus organ death is still prevalent. Even with the Harvard Medical School Ad Hoc Committee's definition of death in 1968, the medical and legal communities still vary on the actual definition of death. The elusive definition of death, whether brain or organ, prompted the American Medical Association, in 1975, to issue a statement regarding prolongation of life. In this statement, the AMA stated that "mercy killing" was contrary to the medical profession and that before starting or removing extraordinary means for prolonging life, there must be irrefutable evidence that biological death is imminent and the family must decide on the advice of a physician. 3

Several means have been suggested for establishing brain death criteria. The common goal of
these diagnostic means is to show beyond a doubt irreversible widespread brain destruction. Such advocated means range from failure of bodily survival despite treatment, to demonstration that all cerebral circulation has ceased.4

The concept of brain death as death is increasing in acceptance in the United States. Both courts and medical practices reflect this trend. For example, the National Conference of Commissioners on Uniform State Laws has approved the "Uniform Brain Death Act". This proposal before state legislatures is an effort to achieve a uniform standard for the declaration of death. Twenty-five states have already passed a brain death statute and several court decisions have made it clear that brain death is considered an adequate criterion for death.5

With the advent of a clear definition of death such as that found above, the following hypotheses were formed prior to initiating the study.

1. There will be no significant difference in the feelings of nurse anesthetists involved in cadaver organ harvest versus those who are not involved in cadaver organ harvest as measured by a questionnaire.

2. There will be a significant difference in the feelings of anesthetists involved in cadaver organ harvest versus those who are not involved in cadaver organ harvest.

**Definition of terms.** Before proceeding with the report of this study, which deals with the personal beliefs and feelings of nurse anesthetists, several terms must be clarified: (1) Empathy—feelings of shared concern; (2) Sympathy—feelings of sorrow; (3) Disgust—feelings of aversion; and (4) Cadaver organ harvest—the removal of kidneys, eyes, etc. for use by another. The study itself took place in the Washington, DC metropolitan area, encompassing the 60-mile radius of the District of Columbia.

Several predictive hypotheses were made:

1. Those anesthetists involved in cadaver organ harvest will have a difficult time removing the "body" from life supports.

2. There will be a greater feeling of sympathy toward the donor by those involved with cadaver

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**Survey questions**

1. Have you ever participated in anesthesia for Cadaver Organ Harvest?
   
   Yes______ No______
   
   If NO, please answer questions 2, 4 & 6 only. If YES please answer all.

2. Do you have feelings of:
   
   Empathy______ toward organ donor?
   
   Sympathy______
   
   Disgust______

3. Do you have difficulty turning off the ventilator and disconnecting equipment when the kidneys have been removed?
   
   Always______ Sometimes______ Never______

4. Do you feel organ harvest is beneficial?
   
   Always______ Sometimes______ Never______

5. Do you make every attempt to maintain body functions, i.e., heart rate and blood pressure, prior to the kidneys being removed?
   
   Always______ Sometimes______ Never______

6. Do you believe in "brain" death as the final diagnostic means before organ harvest?
   
   Always______ Sometimes______ Never______

7. What are your feelings when involved with cadaver organ harvest?

   Number of years in anesthesia______

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**Pilot Study:**

A total of 60 questionnaires were handed out at a state anesthesia meeting with 36 returned for a response rate of 60%. The frequency distribution is given in table one. There were 14 yes and 22 no responses.
harvest over those who are not involved directly with cadaver organ harvest.

3. There will be a greater belief in brain death as the final diagnostic measure by those involved in cadaver organ harvest.

4. There will be a greater feeling of love toward the donor, as one giving a gift to another, by those involved in cadaver organ harvest.

**Methodology**

The method for obtaining data from practicing nurse anesthetists in the designated area was by survey. The questionnaire consisted of seven key questions ranging from: "Have you ever participated in cadaver organ harvest?" to "What are your feelings when involved with a cadaver organ harvest?"

Two separate studies were completed over a three-month period. The pilot study results are given in Tables I and II. The pilot study was conducted at a state meeting in order to establish the need for further study. The actual study itself was conducted at three randomly selected hospitals in the Washington, DC metropolitan area. Target hospitals were selected by drawing names out of a box consisting of all hospital names in the area.

The instrument or tool (the questionnaire) was found to be valid and reliable by face, content, test-retest and interrater reaction. Three experts in the field of organ harvest and anesthesia were asked to evaluate the questionnaire for effectiveness of questions delivering actual attitudes of practicing anesthetists, both involved and non-involved in cadaver organ harvest. These experts consisted of an assistant chief of a transplant team, an anesthetist active in cadaver harvest, and an anesthetist with more than 15 years of experience.

The results of the questionnaire are summarized in Table IV and the number of years in anesthesia practice of those involved in the study are listed in Table III.

The data from the questionnaire was analyzed at the alfa < .05 level, using Chi Square ($X^2$) for frequency probability of the two groups and the Kramers V for association.

This descriptive study, although not statistically significant, did however support the null hypothesis. The results of the two groups showed that 60% had some difficulty in removing life forces from the donor's body. A comparison of the two groups in their belief or non-belief that brain death is the final diagnostic means prior to cadaver harvest showed that: 90% of those involved in cadaver harvest were equally divided between the "always" and "sometimes" categories; while of those who had never dealt with cadaver harvest, 30% believed that brain death is "always" the final diagnostic means, but 70% believe this is true "sometimes."

This means that whether a CRNA is involved in organ harvest or not, many anesthetists have doubts about when death occurs. The responses of both groups as to the benefit of harvest reflected that 65% in the involved group and 60% in the non-involved group believe that it is sometimes beneficial. Both the pilot study and the actual study showed the same results to the question, "How do you feel about the donor?" The majority of CRNAs responded that the donor provided a "gift of life and love to someone else."

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**Table I**

<table>
<thead>
<tr>
<th>Years in practice</th>
<th>f</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>1 - 9</td>
<td>12</td>
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<tr>
<td>10 - 19</td>
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<td>22%</td>
</tr>
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<td>30 - 39</td>
<td>3</td>
<td>8%</td>
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**Table II**

<table>
<thead>
<tr>
<th>Question</th>
<th>Always feel empathy</th>
<th>Sometimes feel sympathy</th>
<th>Never feel disgust</th>
<th>$X^2$</th>
<th>Association V</th>
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<tr>
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<td>9 4</td>
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<td>.190</td>
<td>.08</td>
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<tr>
<td>4</td>
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*Critical $X^2 = 7.81$  $N = 36$  $df = 3$
Discussion

Patients who are considered for organ harvest generally come from the intensive care unit (ICU). In the case of kidney donors, aggressive care for maintenance of adequate renal function is required and provided in the ICU.7 This aggressive maintenance of vital functions (heart rate, kidney perfusion, renal output, and so forth) is continued by the anesthetist until the aorta and vena cava are cross clamped and cut just prior to removal of the kidneys.

It is at this point that anesthetists surveyed indicated that they have difficulty dealing with the organ harvest. In the study, 60% of those involved in organ harvest sometimes had trouble turning off the ventilator and removing the patient from life supports, compared to only 15% who never had such difficulties. Of those involved in organ harvest in the pilot study, 95% always believed in brain death as the final diagnostic means, however, only 45% of those in the actual study group felt the same. This leads to the conclusion that those who are actually involved with organ harvest on a weekly basis have more mixed attitudes of sorrow versus need. Those involved report that they find it difficult at times to detach themselves from the idea that the brain-dead body is a living patient.

There is a clear need for more cadaveric kidneys; the present availability of kidneys versus the demand for them is insufficient. The Center for Disease Control (CDC) did a collaborative pilot project to assist in increasing the supply of kidneys. The findings revealed that the small number of kidneys retrieved was not attributed to lack of suitable organs, but rather, to a failure to identify suitable donors, obtain consent and harvest the organs.8 It was found, however, that by increasing surveillance of staff ICU members to the possibility of a cadaver donor, additional kidneys can be retrieved.9 With this increased drive to obtain more and more kidneys for transplantation, the anesthetist will be confronted with his or her feelings more often. Thus, anesthetists must be prepared to review their attitudes and beliefs, and proceed accordingly.

The major significance of this study was to demonstrate the fact that nurse anesthetists do and can have difficulty dealing with cadaver organ harvest. The study showed that although some anesthetists were detached, there were, nevertheless, mixed feelings of sorrow and joy—sorrow for the loss of a life, and joy for a gift of life.

The major limitation of this study was the sample size. The study needs more in-depth evaluation of actual feelings and anxieties of the practicing nurse anesthetist. Therefore, in-depth studies of anxiety, sorrow, and other feelings would further substantiate the statement that anesthetists have difficulty dealing with cadaver organ harvest.

Table III
Distribution of study for years in clinical anesthesia

<table>
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<tr>
<th>Years in Practice</th>
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<td>7%</td>
</tr>
<tr>
<td>30 - 39</td>
<td>1</td>
<td>3%</td>
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Table IV
Summary results of study

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<th>Question</th>
<th>Always feel empathy</th>
<th>Sometimes feel sympathy</th>
<th>Never feel disgust</th>
<th>X2*</th>
<th>Association V</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>2**</td>
<td>8</td>
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<td>2</td>
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<td>7</td>
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<td>0</td>
</tr>
</tbody>
</table>

*Critical X2 = 7.81  N = 30  df = 3
**Three of Yes group had no comment
and urinary output in order to maintain the life-giving kidneys.

Many times, our own biases must be placed aside so that we may aid and assist another. This study only scratched the surface of the actual feelings involved with each and every anesthetist dealing with cadaver organ harvest. A more in-depth study would be the logical sequel to this article.

REFERENCES

AUTHOR

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