

## VIEWPOINT

## Attitudes of Turkish Anatomists Toward Cadaver Donation

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There is an insufficient number of cadavers in anatomy education in Turkey. This is because of decreased number of unclaimed bodies and very few cadaver donations. Increasing the number of cadaver donation is one of the probable solutions. Although anatomists encourage people to donate bodies, the attitudes of anatomists toward donating their own bodies for dissection is not well known. In this study, the attitudes of Turkish anatomists toward cadaver donation were evaluated. The questionnaires were sent to the anatomists in Turkey by mail and E-mail. Eighty-three anatomists replied to the questionnaire. The main solutions proposed for cadaver insufficiency included increasing the supply of unclaimed bodies (77.1%) and increasing body donation (78.3%). Further, 51.8% of the respondents thought that increasing body donation was a long-term solution. The general belief (83.1%) was that a campaign would help to increase body donation and 47% of respondents were willing to participate in such a campaign. Of the 83 anatomists, 20.5% of the respondents donated their organs and 49.4% were planning to donate them. Further, 15.7% were planning to donate their bodies; however, 63.9% did not consider donating. The main reasons of the respondents to object the donation were: to be dissected by a colleague (15.7%), the unacceptability of donation by family (26.5%), psychological reasons (43.4%), the anxiety of disrespectful behavior to cadavers (26.5%), and religious beliefs (3.6%). Although the majority of the respondents objected to donating their bodies due to psychological reasons, body donation was proposed as the main solution of cadaver insufficiency. *Clin. Anat.* 17:677–681, 2004. © 2004 Wiley-Liss, Inc.

**Key words:** cadaver donation; donation; anatomist; anatomy education; bequest

### INTRODUCTION

Technological developments provide many new facilities in the anatomy education. Despite this fact, dissection of cadavers is still an essential component of anatomy courses. In the history of anatomy, obtaining cadavers had been a major problem for years, perhaps even for centuries. In most of the European countries, the corpses of the criminals were used. Due to social reactions, unclaimed bodies were used later rather than the corpses of the criminals. This has caused an ethical debate over whether the weak and the poor in the society have been abused in the name of science. In the last 50 years, donated bodies have become the major source of cadavers. All these changes have taken from the 12th century until today.

Turkey has a different cultural and religious background compared to the Western world. The first officially permitted dissection of human cadavers in

the Ottoman Empire was made in 1841. Although there are no statements against dissection in either the Koran or in the Tradition of the Prophet, the delay in dissection in the Ottoman Empire was probably due to the underdevelopment of science in the Ottoman Empire during that period. The first dissections were applied on the corpses of convicts who died in the fetter in the Maritime Arsenal. In this period, the dissection of corpses of poor people was not permitted by the Sultan (Kahya, 1979). After establishment of the Republic of Turkey in 1923, the major source of

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cadavers has been unclaimed bodies from mental and state hospitals.

After the 1980s the number of medical schools and medical students have increased in Turkey. Although there is legislation stating that unclaimed bodies should be provided to the medical schools, the number of cadavers has not increased. This is due to the reaction of people regarding the use of unclaimed bodies as cadavers, the rehabilitation of mental hospitals, and the rehabilitation of funeral services. This has caused a dilemma. There is an increased need for cadavers but a decrease in supply. Similar problems were faced in the Western world at the beginning of the 20th century.

Although the problem has been solved in the Western world through donation, there has not been an attempt to increase the number of donations in Turkey. In this study, the attitudes of Turkish anatomists toward the donation of cadavers have been evaluated. The aim of this article is to evaluate attitudes of the anatomists toward body donation and also to find a solution to the insufficiency of cadavers in countries with different cultural backgrounds.

## MATERIALS AND METHOD

There are 256 anatomists (post doctorates, PhD students, and research assistants) in 36 medical faculties in Turkey. These data were obtained from the Association of Turkish Anatomists. The questionnaires were mailed or E-mailed to all of the anatomy departments. The questionnaire provides information about demographic features, opinions about cadaver insufficiency, alternative solutions to the cadaver problem, contribution of body donation to the lack of cadavers, the attitudes to organ donation and body donation, and the psychological effects of the idea of

**TABLE 1. Proposed Solutions to the Insufficiency of Cadavers**

Solutions	Anatomists ( <i>n</i> )	Percentage (%)
Increasing the usage of anatomic models	46	55.4
Usage of scientific softwares	47	56.6
Decreasing the no. of medical schools	34	41
Decreasing the no. of medical students	50	60.2
Increasing the supply of unclaimed bodies	64	77.1
Increasing the no. of body donations	65	78.3
Other solutions	10	12

being dissected. The data were statistically analyzed by SPSS version 10.0.

## RESULTS

The questionnaire was answered by 83 anatomists from 21 anatomy departments. The mean age was 35.57 years. Of the 83 anatomists who answered, 70% were male and 30% were female. The mean work experience as an anatomist was 9.24 years.

The great majority (95.2%) of the respondents believed that there was an insufficiency of cadaver for anatomy education. The main solutions proposed for this problem were to increase the supply of unclaimed bodies (77.1%) and to increase body donation (78.3%). The other solutions proposed included decreasing the number of medical students (60.2%) and using anatomical models more efficiently (55.4%) (Table 1). Almost half of the respondents (51.8%) believed that in the long-term body donation could be a solution to the problem. A total of 24.1% of the respondents

**TABLE 2. Organ Donation vs. Body Donation Among Anatomists<sup>a</sup>**

		Has donated his/her body	May consider donating his/her body	Will not donate his/her body	Has no idea about donating his/her body
Anatomists		0	15.7	63.9	20.5
Has donated his/her organs	20.5	0	35.3	47.1	17.6
May consider donating his/her organs	49.4	0	14.6	58.5	26.8
Will not donate his/her organs	28.9	0	4.2	87.5	8.3
Has no idea about donating his/her organs	1.2	0	0	0	100

<sup>a</sup>Values are %.

TABLE 3. Reasons Not to Donate Their Bodies

Reasons	Percentage (%)
To be dissected by a colleague	15.7
Unacceptable by the family	26.5
Psychologically not ready	43.4
Anxiety of unrespectful behaviors to cadavers	26.5
Religious beliefs	3.6
Other reasons	4.8
No idea	3.6

believed that although body donation was a good solution proposal for insufficient number of cadaver it was almost impossible to realize it in Turkey.

It was believed that a campaign could be effective in increasing body donation (83.1%), whereas 47% of respondents were willing to participate in such a campaign.

The questionnaire asked the respondents about their attitudes toward organ donation. The aim of this question was to determine whether a consistency between organ and body donation existed or not (Table 2). The respondents who have donated their organs previously were 20.5% and 49.4% of the respondents were planning to donate their organs. Further, 28.9% did not consider donating their organs. When asked whether they would donate their bodies, 15.7% of the respondents replied that they might have donated and 63.9% would not consider donating their bodies.

Reasons for not donating the body included being dissected by a colleague (15.7%), feelings of their families (26.5%), psychological reasons (43.4%), the anxiety of disrespectful behaviors to cadavers (26.5%), and religious reasons (3.6%) (Table 3). The feelings about the idea of being dissected are given in Table 4.

**DISCUSSION**

Anatomy has been an essential component of medical education for centuries. The medical education, because of improvements in medicine and technology, has changed greatly in the last 50 years. Anatomical models and computer software have been used for education but dissection is still the main component of anatomy education. The number of cadavers dissected by each student is an important criterion of the quality of anatomy education. Many more cadavers are needed for educational purposes. Unfortunately, obtaining cadavers is still an important problem in Turkey. The major source of cadavers is unclaimed bodies. Due to the increased number of medical schools and students the insufficiency becomes more vulnerable. Similar problems in the Western world at the

beginning of last century have been resolved through cadaver donation (Jones and Fennell, 1991).

Increasing cadaver donation can be a solution to the insufficiency of cadavers for medical education in Turkey. Unfortunately the concept of cadaver donation is almost unknown. It is not easy to persuade people to donate their bodies.

Jones (1998) states that the worldview is unrecognizable, and yet what has reemerged is a realization that what scientists do with the dead body forms part of the culture within which the studies are conducted. There are limits to what cultures will accept, whether this be the act of dissection itself, the parameters of postmortem investigations, the availability of human embryos for study, or the notion of brain death (Jones, 1998). The limits to what a culture will accept may change as a result of time, through education, and because of the needs of society. In the Western world, it was a long time before dissections on human cadavers became acceptable. This no longer presents a problem (Dluzen et al., 1996; Delmas, 2001). In countries like Turkey, where cadaver donation is not sufficient, it is primarily the responsibility of the anatomists to promote the benefits of body donation.

One of the major problems in anatomy education is the insufficiency of cadavers in Turkey. The results of the present study showed a consensus on two possible solutions for the cadaver supply. In short term, it is believed that increasing the supply of unclaimed bodies from hospitals will be a solution. Donated bodies can be an important source of cadavers, but it takes time to reach sufficient numbers. Although the majority believe that it will take a long time, many of the respondents are willing to participate in a campaign to increase donation. A substantial percentage (24.1%) believe that increasing cadaver donation is not possible. Public attitudes toward cadaver donation have not been analyzed in Turkey but the campaigns to increase the cadaveric organ donation have not been successful enough to reach sufficient transplantation number. The results of a campaign to increase cadaver donation may not be easily estimated. These may be the reasons of the negative feelings about the success of such a campaign.

TABLE 4. Feelings About Being a Cadaver

Reasons	Percentage (%)
No emotional reaction	27.7
Shuddering	28.9
Uncomfortable	27.7
Pulled into pieces feeling	30.1
Thrusting	25.3
Unacceptable	39.8
Feeling useful	12

Although there is detailed information about the organ transplantation in Islamic countries, the number of cadavers and the sources of cadavers used for anatomy education are not so well known.

The first known official dissection on human cadaver in Turkish universities was permitted by Ottoman Sultan who was also Khalifa (the religious leader of Muslims) in 1841 (Kahya, 1979). The Turkish Religious Affairs Supreme Council declared positive comment on autopsy in 1952 and heart transplantation in 1968. The first living-related renal transplant was carried out in 1975 and the first domestic cadaveric kidney transplantation was carried out in 1979. In 1980, the Turkish Religious Affairs Supreme Council declared that organ transplantation was appropriate to Islam upon the debates on organ transplantation in the public.

The attitudes toward organ donation may give information about the tendency of people toward cadaver donation. Although the number of organ transplantations has been increased by time the number of transplantations from cadaveric organs is less than living donors (Keçecioglu et al., 2000). This is not only a problem for Turkey but also for the Middle Eastern countries (Daar, 1999). The result of a survey showed that the fear of being cut into pieces and religious beliefs are the two main reasons to not to donate organs in Turkey (Bilgel et al., 1991). Insufficient knowledge about transplantation, misinformation regarding the organ donation, and failure to inform about religious stances may be reasons of this problem in Islamic societies (Bilgel et al., 1991; Abolfazi and Fard, 1992; Randhawa, 1998; Shaheen et al., 2000). The public education about dissection, effective use of press and television, and positive comments of theology professors and religious leaders could help campaigns for body donation and organ transplantation.

The role of religious and cultural traditions has influence on the attitudes of people. It is important to understand Islamic approach to cadaver dissection and organ transplantation. Muslims often utilize the literary genre of the Fatwa as a productive way of expressing the contemporary responses of well known scholars to 'new' questions; i.e., questions for which there is no direct answer in the Koran and the Hadith (Oral Tradition), or in pre-20th century Islamic legal literature (Rispler-Chaim, 1993).

Postmortems for purely scientific purposes or to obtain justice by correctly identifying the cause of death 'suffer' from a delay in burial, the transfer of the body from one place to another before letting it rest in peace, and the possible violation of the integrity of the body. The answer of the muftis is usually positive,

based on balancing damages against benefits (Rispler-Chaim, 1993). There are also objections to dissection based on early burial, decision of brain death, and dignity of human body (Campbell, 1998).

The Koran states "...and if any one saved a life, it would be as if he saved the life of the whole people" (Maide surah verse 32). The maintenance of human life is one of the ultimate goals of Islamic legislation (El-Shahat, 1999). Post-mortem examinations and studying anatomy is acceptable according to Islamic legislation (Salih, 1996). In Islamic principles, necessity makes forbidden things permissible. That means what is legally forbidden becomes permissible in circumstances of extreme necessity.

It is permissible to dissect the dead body of a person with the aim of discovering diseases, finding out a treatment, or knowing the functions of bodily organs and the components of the human body. It is also permissible to carry out this process for the purpose of knowing the reason that caused the death of a person. This is useful in homicide investigation. Using the bodily parts of a dead person is also permissible for the students of medicine who do so as a way of training (Sabri, 2003).

Various aspects of cadavers and dissection have been discussed in literature. The attitudes and reactions of medical students to human dissection and donor's attitudes toward donation for dissection have been investigated (La Spina et al., 1993; Richardson and Hurwitz, 1995; Weeks et al., 1995; Abu-Hijleh et al., 1997; Bourguet et al., 1997; Dickinson et al., 1997). The importance of body donation and its importance for science have been emphasized.

The ethical aspect of the source of cadavers is also a major subject of interest. Although anatomists encourage cadaver donation, the attitudes of anatomists toward donating their own bodies for dissection is not well known. In this study, none of the respondents have decided to donate their bodies for dissection. A total of 15.7% of them may donate and 63.9% of the respondents will not consider donating his/her body. Although it seems there is a conflict between unwillingness to donate your own body and encouraging people to donate their bodies similar attitudes toward organ donation have been observed in other studies. One questionnaire, completed by residents in Toronto, Canada, showed that some of the respondents were willing to donate the body parts of a family member but were hesitant to donate their own organs and tissues (Basu et al., 1989). The negative comments of nurses, physicians, and other health care staff from organ transplantation units have been observed. They described the procedures as mutilation or disrespectful (Lynch, 1990).

In the study by Richardson and Harwitz (1995), the attitudes of donors toward dissection have been evaluated. The donors generally have an anxiety regarding the possibility of disrespect by student dissectors. The anxiety of disrespectful behaviors toward cadavers is one of the reasons for not donating bodies. The meaning of "disrespectful behavior" should not be understood as inappropriate behaviors toward cadavers as in the past, disrespectful behavior has a psychological meaning. Whatever the reason, there is indignity in any activity that dismembers the corpse, whether that dismemberment is in the service of organ donation, medical education/research, or forensic investigation (Lynch, 1990). The dissection of cadavers also has the potential of depersonalization or being treated as a property (Jones, 1998).

The thought of being dissected is not easily accepted. The decision to donate also causes people to face the idea of mortality. Burial or cremation of a corpse symbolizes the leaving of the world of living. The meaning of that decision is to stay as a dead body in the world of living. These conflicts indicate how dead bodies are valuable gifts for science and education.

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