

A Study of Sexual Dimorphism and Age Related Differences in Awareness and Willingness regarding Organ and Body Donation

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Abstract

Background: Human Anatomy is the fundamental subject for medical student and teaching faculties. In recent years, demand of cadavers has drastically increased which remains unfulfilled almost everywhere in the country. The purpose of our study is to assess the awareness and willingness regarding organ/body donation based on gender, different age groups and their familiarity with cadaveric dissection. **Aim:** To study the awareness and willingness for organ and body donation with respect to gender, different age groups and familiarity with Cadaveric dissection. **Material and Methods:** A cross-sectional study using a specially designed, validated questionnaire containing mcq's was done amongst Medical, Dental, Ayurveda and Nursing students, staff and patients of ESIC Institute Gulbarga after taking their informed consent. It was followed by a counseling session where queries regarding organ and body donation were solved and procedure of registration for the same was explained. **Results:** Amongst the 1000 study participants, questionnaires submitted by 194 participants were found incomplete, hence those participants were removed from the study. After analyzing duly signed and filled questionnaire collected from the 806 participants, following observations were seen. 1. Female participants showed more awareness (66.4%, 73.3%) and willingness (41.3%, 15.2%) for organ and body donation. 2. Younger age group participants were found to be more aware (76.3%, 84.24%) and showed more willingness (47.43%, 20.03%) to donate organ and body respectively. 3. Acquainted participants comprising of medical, dental and ayurvedic students who were familiar with cadaveric dissection showed more awareness (87.0%, 92.41%) towards organ and body donation compared to other participants. 4. Lesser acquainted participants showed more willingness (54.6%, 30.76%) to donate organ and body for academic purpose compared to other participants. **Conclusions:** 1. Female participants showed more awareness and willingness for organ and body donation than their male counterparts. 2. Younger age group participants were found to be more aware and willing to donate organ and body than older and middle age groups. 3. Acquainted participants showed more awareness but actual willingness to donate organ and body was shown by lesser acquainted group.

Keywords: Awareness; Organ Donation; Body Donation; Acquainted.

Introduction

Human Anatomy is the fundamental subject for medical student and teaching faculties. In recent years, demand of cadavers has drastically increased which remains unfulfilled almost everywhere in the country. The need of the hour is to spread

awareness for body donation to meet the requirements of a medical student to become compatible doctors. The best way of spreading this message is through our students, staff and patients and later we can include respondents belonging to other professions. Already Body Donation Society is established in Department of Anatomy in ESIC Medical College Gulbarga. The purpose of our study is to assess the awareness and willingness regarding organ/body donation based on gender, different age groups and familiarity with cadaveric dissection. The conclusions emerging from this study will help us to set goals for our Body donation society towards changing the perspective of population of Kalaburagi towards body donation, eventually leading to improvement in medical training and services.

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Aim and Objective

1. To study sexual dimorphism in awareness and willingness for organ and body donation.
2. To study the awareness regarding organ and body donation in different age groups.
3. To study the awareness regarding organ and body donation based on familiarity with cadaveric dissection.

Materials and Methods

The present study is a specially designed, self-administered questionnaire based cross-sectional study, containing 18 points testing the awareness, attitude, knowledge and willingness towards body / organ donation followed by counseling session conducted in Kalaburagi region within 1000 participants. The questionnaire (prepared in English and Kannada) was circulated among the participants. This study was conducted in Department of Anatomy of ESIC Institute of Gulbarga from 1st February 2018 to 31st May 2018. The target population included students, staff and general public/patients. The questionnaire comprised of multiple choice questions and option for personal reason/opinion was given for almost every question. The questionnaire was pilot tested previously amongst 40 random people for :

- i. The clarity of the questions included in it and
- ii. Time period required to fill it.

Time duration of 15 minutes was given for completing the questionnaire. No discussion amongst each other was allowed. Our questionnaire thus got validated after minor modifications. Our research team, after taking informed consent distributed the pretested/validated questionnaire to students at counseling room. One of the researcher always accompanied the participants during filling of questionnaire. Duly filled and signed questionnaire were collected.

The participants were categorized in three groups as follows:

1. Based on Age [2]:
 - Young age group : 15-24 yrs
 - Middle age group : 25-44 yrs
 - Older age group : 45 yrs and above.
2. Based on Familiarity with Cadaveric dissection:
 - Acquainted group
 - Lesser acquainted group

- Not acquainted group
3. Based on Sex:
 - Male
 - Female

Sampling Technique

From all the categories of population i.e. Student, Staff, Patient and General public; taken together, 1000 participants after taking informed consent were selected through Simple random sampling method.

*Sample Selection**Inclusion Criteria*

1. Those who are born and brought up in Gulbarga region.
2. Above 18 years of age.
3. Those who have given consent.

Exclusion Criteria

1. Doctors and faculty members of ESIC Medical, Dental and Ayurveda colleges were excluded.
2. Those born and brought up outside Gulbarga.
3. Those who refused to give consent.

Data Collection Procedure

A specially designed, self-administered questionnaire containing 18 multiple choice questions testing the awareness, attitude, knowledge and willingness. It has been prepared in English and Kannada.

Data Analysis Procedure

Parameters which were studied were age, gender, acquainted and non-acquainted participants. Analyzed with SPSS software. Percentage was calculated. Chi square test was used. Data was represented graphically.

Results

Amongst the student, staff and patient/public group, 1000 participants, were randomly selected for the study. Duly filled and signed questionnaires were collected from them after taking informed consent. This was followed by counseling session. Out of 1000,

194 questionnaires were found to be incomplete. During the counseling session, these 194 participants withdrew their consent and their questionnaires were discarded from the study. After analyzing the questionnaires, the data was collected and as a whole, the observations were as follows:

The data collected from 806 participants was classified into various categories and the observations were tabulated and graphically represented.

Study observed that, among 806 participants, 360 (44.7%) were male and 446 (55.3%) were female. there were 320 (39.7%) general public and patients, 201 (24.9%) medical students, 118 (14.7%) ayurveda

students, 80 (9.9%) non-medical staff, 50 (6.2%) nursing students and 37 (4.6%) dental students.

Study reveals that, there was statistical significant difference of male and female participants in awareness about body donation ($p < 0.05$)

Awareness about body donation had significantly more in females as compare to males There was no statistical significant difference of male and female participants in awareness about organ donation, Willingness about organ and body donation ($p > 0.05$).

Study observed that, among 806 participants, 584 (72.4%) were young age group, 110 (13.6%) were middle age group and there were 112 (14.0%) older age group (Table 3).

Table 1: Sex and faculty wise distribution of study participants

Faculty of Study participants	Male		Female		Total	
	No.	%	No.	%	No.	%
Medical students	86	42.7	115	57.3	201	24.9
Dental students	09	24.3	28	75.7	37	4.6
Ayurveda students	33	27.9	85	72.1	118	14.7
Nursing students	18	36.0	32	64.0	50	6.2
Non-medical Staff	54	67.5	26	32.5	80	9.9
General public / patient	160	50.0	160	50.0	320	39.7
Total	360	44.7	446	55.3	806	100.0

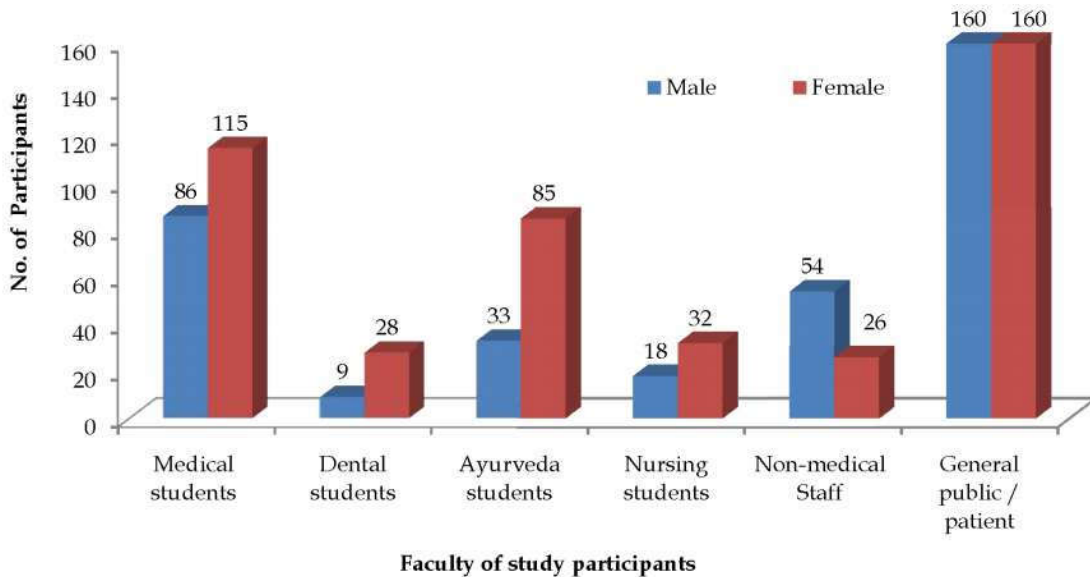


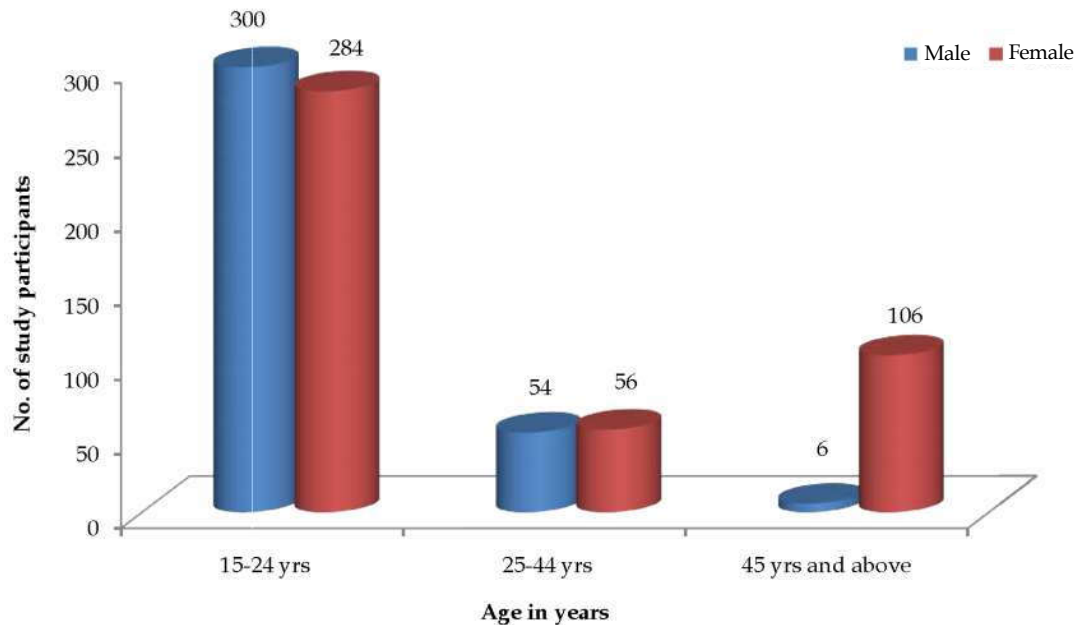
Fig. 1: Multiple bar diagram represents Sex and faculty wise distribution of study participants

Table 2: Sex wise comparison of awareness, willingness about organ and body donation in study participants

Variables	Male Number (%) (N=360)	Female Number (%) (N=446)	Chi-square test P-value & Significance
Awareness about organ donation	215 (59.7%)	296 (66.4%)	$\chi^2 = 3.79, P > 0.05, NS$
Awareness about body donation	238 (66.1%)	327 (73.3%)	$\chi^2 = 4.93, P < 0.05, S$
Willingness about organ donation	133 (36.9%)	184 (41.3%)	$\chi^2 = 1.55, P > 0.05, NS$
Willingness about body donation	69 (19.2%)	68 (15.2%)	$\chi^2 = 2.17, P > 0.05, NS$

Table 3: Age wise distribution of study participants

Age groups	Male	Female	Total	Percentage
Young age group (15-24 yrs)	300	284	584	72.4
Middle age group (25-44 yrs)	54	56	110	13.6
Older age group (45 yrs and above)	6	106	112	14.0
Total	360	446	806	100.0

**Fig. 2:** Multiple bar diagram represents Gender and Age wise distribution of study participants**Table 4:** Comparison of awareness and willingness of organ/body donation with different age groups

Sl. No	Study participants	Acquainted group			Total
		Acquainted	Lesser acquainted	Non-acquainted	
1	Medical students	201	0	0	201
2	Dental students	37	0	0	37
3	Ayurveda students	118	0	0	118
4	Nursing students	0	50	0	50
5	Non-medical Staff	0	80	0	80
6	General public / patient	0	0	320	320
	Total	356	130	320	806

Table 5: Comparison of awareness and willingness of organ/body donation with different age groups

Sl. No	Age group	Awareness for organ donation	Awareness for body donation	Willingness for organ donation	Willingness for body donation	Total
1	Younger age group	446 (76.3%)	492 (84.2%)	277(47.4%)	117 (20.0%)	584 (72.4%)
2	Middle age group	56(50.9%)	57(51.8%)	37 (33.6%)	17(2.72%)	110 (13.6%)
3	Older age group	09(8.03%)	16(14.28%)	03 (2.67%)	03 (2.67%)	112 (13.8%)
	Total	511 (63.39%)	565 (70.09%)	317 (39.33%)	137 (16.99%)	806 (100%)

Table 3 shows that amongst 806 participants, 356 (44.16%) were medical, dental and ayurvedic students which come in acquainted group. 130 participants (16.12%) belong to nursing students and non-medical staff which come in lesser acquainted category and 320 participants (39.70%) belonged to non-acquainted group.

Table 4 shows that participants belonging to younger age group showed more awareness and willingness for organ and body donation than other age groups.

Table 5 shows that acquainted group comprising of professional students showed more awareness towards organ and body donation. But actual

willingness to donate organ and body for academic purpose was shown more by lesser acquainted group.

Discussion

To overcome the deficiency of supply of cadavers for academic purpose, Body Donation Society was established in Department of Anatomy in ESIC Medical College Gulbarga in the month of February this year. The drive to spread more awareness about organ/body donation led us to conduct this study to understand the thoughts of general public, patients, staff and students in Kalaburagi region about organ/body donation. In present study, which is a part of original study done at ESIC Institute Gulbarga, amongst total 806 participants, overall awareness for organ donation was 63.39% and for body donation was 70.09%. This finding match with studies of Dope et al. [3] (68%), PradnyeshPanshewdikar et al. [4] (76.84%) and VaishalyBharambe et al. [5] (78%).

In present study, Medical students who were more acquainted with cadaveric dissection showed more awareness about organ donation (91.86%) and body donation (94.18%) than staff (lesser acquainted) and general public / patient (non- acquainted group). This finding match findings from older studies of Chung CK, Ng CW et al. [6]. 2008 and P Burra, M De Bona et al. [7] 2005.

Female medical students (19.13%) surprisingly showed more willingness towards body donation compared to other female dental (07.14%), nursing (09.37%) and ayurvedic (17.64%) students. Overall, female study participants showed more awareness and willingness for organ and body donation compared to their male counterparts. This finding match with that of Bilgel H, Sadikoglu G et al. [8] (2006).

From the present study it is clear that acquainted group were not agree to donate their body for dissection purpose despite being nicely aware. Older study among medical professionals showed that only 22% physicians are willing to donate their bodies for medical education, 85% believed that donated bodies were misused [9]. A study among Turkish anatomist is reported that 63.9% would not consider themselves to donate their bodies as they were not prepared. So, shortage of organ or body is not due to ignorance or misconception only, but it is the thought of getting self -dissected as a cadaver. Practice of honouring the cadaver by students and teachers from the commencement of medical course

session should be followed as in Korea and Thailand [10,11].

Conclusions

1. Female participants showed more awareness and willingness for organ and body donation than their male counterparts.
2. Younger age group participants were found to be more aware and willing to donate organ and body than older and middle age groups.
3. Acquainted participants showed more awareness but actual willingness to donate organ and body was shown by lesser acquainted group.

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