Public knowledge on brain death and organ donation in a selected Sri Lankan population

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Introduction: Brain death is defined as irreversible and complete cessation of the functions of the brain and brain stem. The awareness of brain death and organ donation is still questionable among the public and the data on this aspect is lacking in Sri Lanka.

Objective: To assess public knowledge on brain death and organ donation in Sri Lanka

Methods: 2 public surveys were performed using two questionnaires during two consecutive medical exhibitions held at Colombo during 2017 and 2018. People less than 16 years of age were excluded. No ethical approval was required, and participation was entirely voluntary with responses kept anonymised.

Results: A total of 179 and 203 participants answered the questionnaire in survey 1 and 2 respectively. More than 80% of participants have heard of brain death. From the participants, 175 (97.8%) knew donating organs can save lives and 162 (90.5%) were willing to carry an organ donor card and expressed a desire to donate organs. Furthermore, 19% of the participants had at least one relative who has donated organs. Only 78 (43.5%) knew that all the listed organs (eye, kidney, liver, lung, heart, pancreas) could be donated.

Only 88 (43.3%) knew brain death is considered legal as an individual's death in Sri Lanka. Interestingly, 24 (11.5%) and 44 (21.7%) said 'yes' or 'don't know' to the question on the possibility of returning to life in people with brain death respectively.

Conclusion: This shows the need of education programmes, information campaigns and public media on this aspect.

Keywords: Brain death; organ donation; organ transplantation

Introduction

Brain death is defined as irreversible and complete cessation of the functions of the brain and brain stem.¹ The concept of brain death as a death of an individual has been recognised by many countries. However, there are differences in diagnostic criteria of legal death worldwide.² Due to the advances in technology, surgery and immunosuppression, the demand for organs is

more than organ donors.³ Understanding the concept of brain death plays a vital role in organ transplantation and donation. Organ donation is allowed once brain death is confirmed according to the transplant act in Sri Lanka.⁴ However, the awareness of brain death and organ transplantation is still questionable among the public and the data on this aspect is lacking in Sri Lanka. Our survey assessed the awareness and knowledge of the brain death and organ transplantation among public who visited a national health exhibition in Sri Lanka.

Methods and Materials

We performed 2 public surveys (phase 1 and phase 2) using two questionnaires during two consecutive medical exhibitions during 2017 and 2018 held at Colombo Sri Lanka. The questionnaires were available to the public at the stall dedicated to intensive care unit. The aim of the questionnaire was clearly explained to the public who visited the intensive care stall and

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invited to answer entirely on voluntary basis and the confidentiality was assured. People less than 16 years of age was excluded from the survey. The questions were available in all 3 languages (English, Sinhala, Tamil) for the volunteers. No personal data except for age, sex and education level was obtained in the questionnaire. No ethical approval was required, and participation was entirely voluntary with responses kept anonymised. At the end of questionnaire, the participants were explained the current situation on brain death and organ donation in Sri Lanka. The data were analysed using SPSS 22.0 statistical package.

Results

Phase 1

Phase 1 was carried out during the medical exhibition held on January 2017. The questions were mainly based on knowledge and attitudes on organ transplantation. Total of 179 people answered the questionnaire. Out of the participants 104 (58.1%) of them were females and the mean age of the participants was 36.8 ± 13.7 . Majority, 175 (97.8%) were aware that organs can be donated to save another life. Out of all the participants, 162 (90.5%) were willing to carry an organ donor card and expressed the desire to donate organs after death. Only 100 (55.9%) knew that organs can be donated both during life and after brain death.

Table 1: Frequency of the participants' answers to questions of awareness and attitudes towards organ donation

Question	Yes N %	No N %	Don't know N %
Are you aware that organs can be donated to save a life of another person?	175 (97.8)	4 (2.2)	NA
Do you have a relative whose organs have been donated?	34 (19)	145 (81)	NA
Have you heard of brain death?	148 (82.7)	31 (17.3)	NA
As the next of kin, could you decide to donate the organ(s) of a brain dead relative if he/she has not make any consent prior to death?	100 (55.9)	36 (20.1)	43 (24)
Do you know what an organ donor card is?	62 (34.6)	117 (65.4)	NA
Are you willing to carry an organ donor card and express your desire about organ donation after your death?	162 (90.5)	17 (9.5)	NA

NA: not applicable

Figure 1: Answers to the question on when you can donate organs

Figure 2: Question on which organs can be donated? Answers included cornea, kidney, heart, lung, liver, pancreas, all or don't know

Phase 2

Phase 2 was carried out during January 2018 at the same annual medical exhibition. The questions mainly addressed knowledge on brain death. Out of the visitors to the stall, 203 answered the questionnaire. Mean age was 40.24 ± 15.78 and majority 129 (63.5%) of them were males. Most of the participants 146 (71.9%) were educated up to advanced level and beyond.

Discussion

Brain death as a death of an individual is accepted as a legal death in many countries following landmark paper by Harvard medical school in 2008.⁵ Organ transplantation has developed into a major speciality due to the advances in knowledge and technology.

Table 2: Frequency of the participants' answers to questions of knowledge on brain death.

Question	Yes N %	No N %	Don't know N%
Have you ever heard of brain death?	164 (80.8)	39 (19.2)	NA
Is brain death equal to human death?	115 (56.7)	65 (32)	23 (11.3)
Can brain-dead patients donate organs?	174 (85.7)	15 (7.4)	14 (6.9)
Is brain death legal in Sri Lanka?	88 (43.3)	31 (15.3)	84 (41.4)
Is there a possibility of returning to life in people with brain death?	24 (11.8)	135 (66.5)	44 (21.7)

NA: not applicable

However, acceptance and knowledge of public on this aspect is highly variable since it involves social, religious, moral, political and legal aspects.⁶ Sri Lanka being a multi-religious country acceptance of these concepts would be challenging.

A pilot study done by Dominique E. Martin on knowledge and attitudes towards organ donation and transplantation in Sri Lanka showed encouraging results of public support for living and deceased organ donation, despite significant knowledge gaps.⁷

In our two surveys more than 80% of participants have heard of brain death. Majority, [175 (97.8%)] knew that donating organs can save lives and 162 (90.5%) were willing to carry an organ donor card and expressed the desire to donate organ donation after their death. Furthermore at least 19% of the participants had a relative who had been an organ donor. These numbers would be encouraging as the attitudes towards organ donation plays a key role in organ transplantation.

According to the Sri Lankan transplant act, the next of kin of the deceased person can give prior consent in writing for the removal of the body of such person or such part or tissue. However only 100 (55.9%) knew this fact. On questioning of organs that can be donated (eye, kidney, liver, lung, heart, pancreas), only 78 (43.5%) knew that all these organs can be donated. However, in both phases of study, majority of the public knew organs can be donated after brain death of an individual, 147 (82.1%) and 174 (85.7%) respectively.

In phase 2 of the study, even though majority have heard of brain death only 115 (56.7%) knew brain death is considered as human death and only 88 (43.3%) knew brain death is considered legal as an individual's death in Sri Lanka. Interestingly, 24 (11.5%) and 44 (21.7%) said 'yes' or don't know to the question on the possibility of returning to life in people with brain death respectively. These facts show that there are still misbeliefs among the public regarding the concept of brain death.

Conclusion

The results of the study show that public knowledge and awareness about brain death and organ donation is still at a moderate level. However, the attitudes towards organ donation is encouraging. These deficits can be overcome by education programmes, information campaigns and public media. A larger study is needed before generalising these data on Sri Lankan population.

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