



VALIDATION & DEVELOPMENT OF SURVEY QUESTIONNAIRE TO EVALUATE THE FACTORS INFLUENCING ATTITUDE, KNOWLEDGE & AWARENESS ABOUT ORGAN DONATION IN INDIAN POPULATION.

Clinical Research

Dr Shabina Shaikh*

PhD Scholar, Department of Health & Biomedical Sciences, Symbiosis Centre for Research & Innovation, Symbiosis International (Deemed University) Pune.

ABSTRACT

Aim & Objective: To design and validate questionnaire for measuring factors influencing Attitude, Knowledge & Awareness about Organ Donation in Indian Population.

Materials & Methods: Validation of questionnaire was done by Delphi Method, A blueprint of 109 structured questionnaire was prepared, based on three domains namely knowledge(47), attitude (27) & awareness(35) basic demographic detail of the participant was also included. Mobile based app Enketoon (ONA) was created, validation process was done using Delphi Method in 03 phases, 1st phase 20 experts opinion was obtained result was analysed and re-evaluated questionnaire reduced from 109 to 47, in 2nd phase different set of 20 experts were approached questionnaire reduced to 21, In final phase a pilot study on 100 PG medical students was conducted, this validation process comprised of collection of data, data analysis description of tool, reliability of tool. At the end of the Delphi round questionnaire were analyzed and check reliability was established by using Cronbach alpha method it was found to be $r = 0.907$ for overall structured questionnaire confirming the tool was reliable, data entry was performed in Microsoft excel 2007. Data code-sheet was generated. Descriptive statistical analysis, which included frequency, mean and percentage, was used to characterize the data. The statistical tests chi-square test, Mann-Whitney U and Kruskal Wallis tests were used.

Result: The final constructed questionnaire was the outcome of Delphi method Results were considered statistically significant at p value of < 0.05 & Cronbach's Alpha value for overall composite of questionnaire was $r = 0.907$, and $r = 0.888$ for 8 questionnaire of knowledge(38%) $r = 0.680$ for 8 questions of attitude (38%) and $r = 0.731$ of 5 questionnaire of awareness(24%).

Conclusion: The final 21 questionnaire consists of knowledge, Awareness & Attitude about organ donation and intention domain which is valid and reliable tool to use for organ donation awareness survey.

KEYWORDS

Delphi Method, Validation of Questionnaire, Organ Donation, Reliability of tool, Chronbach's Alpha.

BACKGROUND:

Organ transplantation is the desired treatment modality for end stage organ disease and organ failure. [1] It is the only effective and definitive treatment option for liver and heart failure and in terms of quality of life and economical treatment cost, most accepted treatment for kidney failures though other replacement therapies are also available for kidney failure patients. The most frequently carried out transplants are kidney transplants in the world. Other than kidney alone, cornea and multiple organ transplants are also being performed including pancreas, liver and heart. With the advent of modern techniques transplantation science has expanded to newer horizons and this therapeutic approach has increased indications and effectiveness. [2]

India is a huge country with people with diverse religious and economic status and attitudes and knowledge about organ donation and transplantation. In general public the studies regarding attitude and behavior towards organ donation have helped influence factors such as level of related knowledge, level of education and motivation. The factors like ethnicity, gender, and traditional values have also been identified as predictors of donation practice. [3]

Adithyan and Mariyappan et al have reviewed organ transplantation extensively in a paper titled "Factors that determine deceased organ transplantation in India" in the journal "Indian Journal of Transplantation" in 2017. They opine that one of the most important contributions of medical sciences and progress of society in general is the possibility of extension of life. Even though medical sciences have progressed much in the matter, India as a country continues to lag behind and multiple factors determine such a state. These various factors are looked into in detail. The various factors that have been reviewed include, Lack of awareness among general public, Lack of awareness among medical professionals, Social, cultural and religious factors, Organization inadequacies, Ethical and medico-legal aspects [4]

Aim: Validation of questionnaire using Delphi Method for measuring factors influencing organ donation and transplant.

Objective:

1. To design and prepare questionnaires to evaluate factor's influencing Knowledge, Awareness Attitude & willingness about organ donation in adult population in India.
2. To evaluate the accuracy and consistency of questionnaires using Cronbach's alpha and test reliability method.

MATERIALS AND METHODS:

Validation of questionnaire was done in multiple phases using Delphi Method. It is a flexible research technique The Delphi method is well suited as a research instrument when there is incomplete knowledge about a problem it is an iterative process to collect and distill the anonymous judgments of experts using a series of data collection and analysis techniques interspersed with feedback [5].

Development Of Research Question:

lot of papers related to the similar study was reviewed, research articles was read and based on experts report initially a total of 109 questionnaires were designed, The distribution of questionnaires was Attitude & Willingness = 27, Knowledge = 47 Awareness = 35 The demographic parameters Age, Gender, Number of years in school/ school & Marital status was also included, to collect the judgments of experts Delphi method was applied.

Design the Research: A link <https://enket.ona.io/x/#4Kp0m9Sr> was generated for the validation of questionnaire.

Selection of Experts: In the first step of validation questionnaires were shared with 20 Experts from different institutes & specialty (Urologist & Nephrologist senior transplant coordinator). Anonymity of participants was maintained at all times.

Develop Delphi Round One Questionnaire

Initial 109 questionnaires were shared with the experts and they were asked to comment on the relevance of question the given options were, 1) Strongly disagree 2) Disagree 3) Neither agree nor disagree 4) Agree 5) Strongly agree. Those items which were uniformly answered by most of the recipients accurately were noted Those items which were answered inaccurately were considered for removal. The respondents could respond to each question with either of the three options, 0) Remove This Question 1) Reword Or Rephrase This Question 2) Keep This Question As It Is, those items that were responded to with "remove this question" were removed.

Release And Analyzedelphi Round One Questionnaire

At the end of first Delphi round pilot study questionnaire were analyzed and to check reliability was established by using cronbach alpha method and it was found to be $r = 0.798$ for knowledge, $r = 0.780$ for attitude & $r = 0.757$ for awareness and which indicates the tool was revised for some questions & deleted for some questions. At the end of the pilot study results were reduced to 47 questionnaires.

Develop Delphi Round Two Questionnaires -

After validation of the 1st step of validation different sets of 20 experts

was identified of similar expertise link was recirculated for the validation.

Release And Analyze Delphi Round Two Questionnaire -

The panel of content experts were asked to review the relevance of each question on a 5- point Likert scale, 1) mean score from 0.01 to 1.00 is (strongly disagree) 2) mean score from 1.01 to 2.00 is (disagree) 3) mean score from 2.01 until 3.00 is (neutral) 4) mean score from 3.01 until 4.00 is (agree) 5) mean score from 4.01 until 5.00 is (strongly agree). Those questions which had an overlap of both being rectified by the senior experts by having high level of reliability, and also being answered by non-experts accurately were chosen and retained in the final questionnaire. At the end of the second delphi round questionnaire were analysed and to check reliability was established by using cronbach alpha method and it was found to be $r = 0.907$ for overall structured questionnaire and which indicates the tool was reliable. It was found to be $r = 0.888$ for knowledge questionnaire, $r = 0.680$ for attitude & $r = 0.731$ for awareness. At the end results were reduced to 21 questionnaires.

Delphi Pilot Study

For the validation of 21 questionnaires A pilot study of 100 sample was conducted on the group of medical students . The accuracy of the answers and the responses were checked.

Statistical Analysis & Reliability Of The Tool:

Reliability of a research instrument is defined as the extent to which the instrument yields the same results on repeated measures.

The tool after validation was subject to test it for reliability. The total 109 structured questionnaire out of 47 questions were knowledge, 27 were attitude & 35 were awareness questionnaire was administered to 20 experts . The reliability was established by using cronbach alpha method and it was found to be $r = 0.798$ for knowledge, $r = 0.780$ for attitude & $r = 0.757$ for awareness and which indicates the tool was revised for some questions & deleted for some questions.

A revised questionnaire tool after validation was subject to test it for reliability. The total 47 question structured knowledge, attitude & awareness questionnaire was administered to 20 different experts. The reliability was established by using cronbach alpha method and it was found to be $r = 0.453$ for overall structured questionnaire and which indicates the tool was revised or deleted some questions. It was found to be $r = 0.320$ for knowledge questionnaire, $r = 0.085$ for attitude & $r = 0.731$ for awareness.

A revised questionnaire tool after validation was subject to test it for reliability. The total 21 questions structured out of 8 were knowledge, 8 were attitude & 5 were awareness questionnaire was administered to 100 Medical postgraduate experts. The reliability was established by using cronbach alpha method and it was found to be $r = 0.907$ for overall structured questionnaire and which indicates the tool was reliable. It was found to be $r = 0.888$ for knowledge questionnaire, $r = 0.680$ for attitude & $r = 0.731$ for awareness.

Prepared Final Questionnaire -

After second step of validation from 20 experts total 21 questionnaires were finalized as per the following distribution, Attitude & Willingness (8) Knowledge (8) Awareness (5) Questions This questionnaire formed the basis for further refinement.

Figure : Two round Delphi Process

Table : 01 Reliability Statistics For The Questionnaire :

Parameter	Cronbach's Alpha	Number of items
Knowledge	0.888	8
Attitude/willingness	0.68	8
Awareness	0.731	5
Overall composite questionnaire	0.907	21

Table 02 Question Wise Distribution Of Knowledge Of The Study Population.

Sr. No.	Question	Response (n=600)	
		Frequency	Percentage
1	What Is Organ Donation?	293	48.83%
2	Do you support organ donation?	406	67.67%
3	Do you agree to donate organs when	326	54.33%

3	Do you agree to donate organs when you die?	326	54.33%
4	Does your family agree with organ donation?	263	43.83%
5	Do you feel comfortable to think or talk about organ donation?	394	65.67%
6	Do you have relatives whose organs have been donated?	150	25.00%
7	Does your religion approve of organ donation?	288	48.00%
8	Is it important for the family members to know that a person has consented for organ donation after his/her death?	389	64.83%
Total Overall		316	52.27%

In the above Table No.2 show that, there were 8 question regarding knowledge about organ donation of the study population, overall knowledge of the study population was 52.27%.

Table 3 Question Wise Distribution Of Attitude Of The Study Population

Sr. No.	Question	Response (n = 600)	
		Frequency	Total
1	After organ donation, can I live a normal life?	279	46.50%
2	Are you willing to carry an organ donor card and express your desire about organ donation after your death?	278	46.33%
3	As a next of kin, would you be willing to donate the organs of a brain dead relative?	299	49.83%
4	Should organ donation be prompted?	419	69.83%
5	What is your perception of organ donation?	472	78.67%
6	Are you aware of "The Human organs Transplantation Act"?	289	48.17%
7	Do you agree that there is a lack of information about organ donation in our country among the masses?	427	71.17%
8	What is the age limit for organ donation?	260	43.33%
Total Overall		340	56.73%

In the above Table No. 4.14 show that, there were 8 question regarding attitude about organ donation of the study population, overall 56.73% study population has positive attitude

Table 4 Question Wise Distribution Of Awareness Of The Study Population.

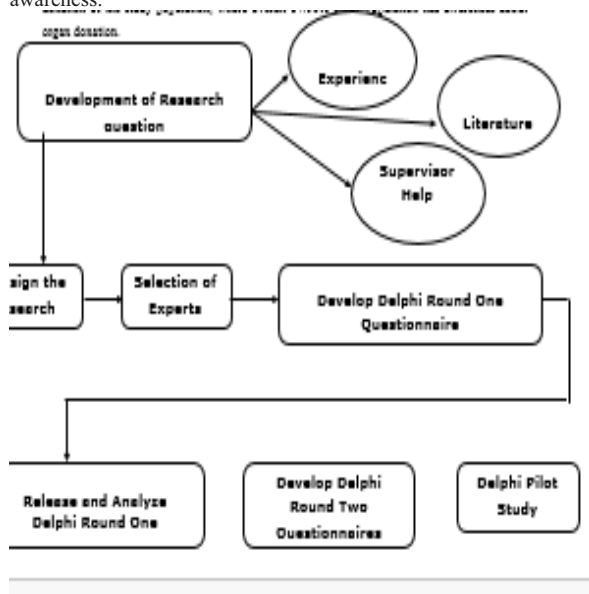
S r. No.	Question	Response (n=600)	
		Frequency	Percentage
1	One cadaver can save how many lives?	251	41.83%
2	Are you aware that a parliamentary law in India recognizes brain death as a form of a death, so that organs like kidneys, heart, liver and lungs can be donated to needy patients?	264	44.00%
3	What medical condition is contraindicated for organ donation?	447	74.50%
4	For donation after death, who should give consent?	377	62.83%
5	Which organs can be transplanted after death?	398	66.33%
Total Overall		347	57.90%

In the above Table No 4.15 shows that, there were 5 questions regarding awareness about organ donation of the study population, where overall 57.90% study population has awareness about organ donation.

DISCUSSION:

Validation of questionnaire was based on Delphi Process, which was developed and validated as a tool for measuring factors influencing organ donation awareness amongst Indian population. Overall results demonstrated that questionnaire is an accurate measure of organ

donation and transplant survey. The process of questionnaire validation was done in several steps, content validity, reliability tool helped to assess whether content of questionnaire was relevant to the survey or not ,test-retest confirmed accuracy and relevance of questionnaire and will be useful for the survey of organ donation awareness.



CONCLUSION:

Organ donation awareness questionnaire is a valid and reliable tool can be used in India in a different language to cover the wider range of population, this will be useful to understand and evaluate the factors affecting lack of awareness amongst Indian population.

REFERENCES:

1. Bezinover D, Saner F. Organ transplantation in the modern era. BMC Anesthesiol [Internet]. 2019 [cited 2019 Oct 1];19(1):32. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/30832567>
2. Black CK, Termanini KM, Aguirre O, Hawksworth JS, Sosin M. Solid organ transplantation in the 21st century. Ann Transl Med [Internet]. 2018 Oct [cited 2019 Oct 1];6(20):409. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/30498736>.
3. Mithra P, Ravindra P, Unnikrishnan B, Rekha T, Kanchan T. Perceptions and Attitudes Towards Organ Donation Among People Seeking Healthcare in Tertiary Care Centers of Coastal South India.IJPC2013; 83–87.
4. Adithyan GS, Mariappan M. Factors that determine deceased organ transplantation in India. Indian J Transplant 2017; 11: 26 - 30. Available from: <http://www.ijtonline.in/text.asp?2017/11/2/26/214377>.
5. Skulmoski, G.J., Hartman, F.T. & Krahn, J. (2007). *The Delphi Method for Graduate Research. Journal of Information Technology Education: Research*, 6(1), 1-21. Informing Science Institute. Retrieved July 28, 2020.