

Significance of types of questionnaires in assessing knowledge, attitude & practice of organ donation

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[Received: 08/10/2013, Revised: 25/11/2013, Accepted:28/11/2013]

Abstract

Background :

Questionnaires are a very important part of research. Forming a questionnaire that gets us the exact information is quintessential. Questionnaires using both structured and unstructured questions appropriately will be able to assess both the particulars and the perceptions of the respondents. This paper tries to quantify the effect of structured and unstructured questions on various types of questions.

Aim : To assess the of 'Knowledge, Attitude & Practice' regarding organ donation among college students using structured and unstructured questionnaires.

Methodology : A total of 97 medical students participated where structured and unstructured questions were administered results analysed using Z/t/chi test.

Results and Conclusion : Knowledge of various aspects on organ donation among the medical students was low (33.1%) with mean score of 12.2+/-2.structured questions yielded more and specific responses although unstructured responses had an advantage of allowing participants to add their own inputs.

Introduction

Questionnaires are a very important part of research, especially in descriptive studies and many studies do have a descriptive component in them¹.

Forming a questionnaire that gets us the exact information we need while avoiding unnecessary questions is quintessential. The questions should not be ambiguous and subject to interpretation.

Questionnaires can be broadly be classified into structured and unstructured questionnaires².

The best example of a structured questionnaire is the multiple choice questions used in various entrance exams. In a structured questionnaire, there are a limited number of specific responses.

The best example of an unstructured questionnaire is the term end exam question papers. In an unstructured questionnaire, the respondent has the flexibility to answer the question according to his perception.

Both types of questionnaires have their own advantages and disadvantages. Questionnaires using both structured and unstructured questions appropriately will be able to assess both the particulars and the perceptions of the respondents. Such questionnaires are called 'Semi structured questionnaires'³.

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This paper tries to quantify the effect of structured and unstructured questions on various types of questions.

Objectives

- 1) To assess the of 'Knowledge, Attitude & Practice' regarding organ donation among college students using structured and unstructured questionnaires
- 2) To compare the differences in the pattern of answers to various questions in structured and unstructured questionnaires

Methodology

This study was conducted on first year medical college students in Karnataka. Permission of the administration was obtained and the students who gave informed consent were included in the study.

The students were first given an unstructured questionnaire regarding organ donation like blood, eye and kidney. After they completed it, they were immediately given the structured questionnaire. Data was entered using Microsoft excel software. Descriptive analysis was done using proportions. The differences in responses to the 2 types of questionnaires have been described and t test has been used to test the significance of quantitative difference.

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Table 1: KAP regarding blood donation using different types of questionnaires

Blood donation	Unstructured Questionnaire		Structured Questionnaire			
Heard	Yes	97 (100%)	Yes	97 (100%)		
Source of information	School/College	44 (%)	Curriculum	15 (%)		
	TV	35 (%)	TV ad	29 (%)		
	Doctor/Hospital	26 (%)	TV program	08 (%)		
	News paper	17 (%)	Teachers	21 (%)		
	Friends	15 (%)	Friends	14 (%)		
	Posters	08 (%)	News paper	17 (%)		
			Movie stars	24 (%)		
Donated blood	Yes	02 (%)	Yes	02 (%)		
	No	95 (%)	No	95 (%)		
Reason for donating	Family / friend	01 (%)	Family / friend	01 (%)		
			Request	01 (%)		
			Blood donation Camp	Nil		
			Advertisement	Nil		
Reason for not donating	Fear	23 (%)	Do not have enough blood	19 (%)		
	Become weak	19 (%)	I may get disease	05 (%)		
	Anaemic	08 (%)	Afraid of needle pricks	21 (%)		
	Female	04 (%)	I may become weak	18 (%)		
	Not answered	43 (%)	Why unnecessary trouble	11 (%)		
			My family may object	04 (%)		
			My religion forbids	Nil		
			Others	08 (%)		
			Not answered	27 (%)		
Place of donation	Blood bank	97 (100%)	Authorized blood bank	97 (100%)		
	Donation Camp	11 (%)	Blood Donation camp	11 (%)		
Who needs donated blood			Any hospital	18		
			Government hospital	09		
			Accident / Injury	37 (%)	Accident	46 (%)
			Surgery	29 (%)	Burns	18 (%)
			Disease	27 (%)	Injury	31 (%)
			Weakness	19 (%)	Surgery	28 (%)
			Anaemia	13 (%)	Cancer	13 (%)
			Pregnancy	11 (%)	Pregnancy	16 (%)
			Blood loss	09 (%)	Fever	07 (%)
			Ambiguous	28 (%)	Jaundice	06 (%)
Who can donate blood			Dialysis	03		
			Others	Nil		
			Healthy	31 (%)	Males	97 (100%)
			>18yrs	26 (%)	Females	74 (%)
			Disease free	26 (%)	12-18yrs	05 (%)
			>45kgs	12 (%)	18-45yrs	97 (%)
			Various ages	29 (%)	45-60yrs	91 (%)
					60-70yrs	42 (%)
					35-45kg	37 (%)
					45-65kg	95 (%)
		65-100kg	83 (%)			

			Hb% >10	02 (%)
			Hb% >12.5	76 (%)
			Hb% >14	19 (%)
			SBP 80-120 mmHg	12 (%)
			SBP 100-140 mmHg	28 (%)
			SBP 120-160 mmHg	56 (%)
			DBP 60-80 mmHg	07 (%)
			DBP 70-90 mmHg	16 (%)
			DBP 80-100 mmHg	44 (%)
Can you sell blood	Yes	33 (%)	Yes	34 (%)
	No	47 (%)	No	48 (%)
Can you buy blood	Yes	16 (%)	Yes	14 (%)
	No	29 (%)	No	37 (%)
How will blood donation affect your body	Ambiguous	48 (%)	Reduces cholesterol	46 (%)
	Better health	19 (%)	Prevents heart attack	22 (%)
	New RBC	17 (%)	Does not cause any disease	65 (%)
	No change	10 (%)		
Do you know a donor	Yes	62 (%)	Yes	62 (%)
	No	35 (%)	No	35 (%)
Do you recommend blood donation	Yes	81 (%)	Yes	89 (%)
	No	nil	No	nil

Table 2: KAP regarding Eye donation using different types of questionnaires

Eye donation	Unstructured Questionnaire		Structured Questionnaire	
Heard Source of information	Yes	97 (100%)	Yes	97 (100%)
	TV	51 (%)	Curriculum	15 (%)
	School/College	34 (%)	TV ad	29 (%)
	Doctor/Hospital	18 (%)	TV program	08 (%)
	News paper	10 (%)	Teachers	32 (%)
			Friends	15 (%)
			News paper	13 (%)
			Movie stars	12 (%)
			Others	32 (%)
Place of donation	Eye bank	38 (%)	Eye bank	40 (%)
	Hospital	35 (%)	Hospital	31 (%)
Who needs donated eye	Blind	62 (%)		
	Ambiguous	16 (%)		
Who can donate eyes	After death	37 (%)	After death	48 (%)
	Anyone/healthy	13 (%)	healthy living person	01 (%)
	Ambiguous	20 (%)		
Can you sell eye	Yes	15 (%)	Yes	14 (%)
	No	49 (%)	No	49 (%)
Can you buy eye	Yes	21 (%)	Yes	20 (%)
	No	32 (%)	No	33 (%)
Do you know a donor	Yes	10 (%)	Yes	10 (%)
	No	79 (%)	No	79 (%)
Do you recommend eye donation	Yes	76 (%)	Yes	84 (%)
	No	nil	No	nil

Table 3: KAP regarding kidney donation using different types of questionnaires

Kidney donation	Unstructured Questionnaire		Structured Questionnaire	
Heard Source of information	Yes	96 (%)	Yes	97 (100%)
	TV	81 (%)	Curriculum	02 (%)
	School/College	18 (%)	TV ad	02 (%)
	Doctor/Hospital	08 (%)	TV program	73 (%)
Who needs donated kidney			Teachers	04 (%)
	Kidney failure	42 (%)	Friends	07 (%)
	Ambiguous	26 (%)	News paper	28 (%)
			Movie stars	Nil
			Others	09 (%)
Who can donate kidney	Healthy	63 (%)	Any healthy person (AHP)	46 (%)
	Ambiguous	09 (%)	AHP with similar genes	27 (%)
Can you sell kidney			Kin with similar genes	54
	Yes	35 (%)	Any family member	19
Can you buy kidney	No	43 (%)	Other	Nil
	Yes	21 (%)	Yes	33 (%)
Do you know a donor	No	32 (%)	No	49 (%)
	Yes	01 (%)	Yes	22 (%)
Do you recommend kidney donation	No	47 (%)	No	32 (%)
	Yes	65 (%)	Yes	01 (%)
	No	02 (%)	No	85 (%)
			Yes	67 (%)
			No	Nil

Results

A total of 97 medical college students belonging to first term consented to participate in the study. Of these, 49 were girls and 47 were boys. 78 were urban residents and 19 were rural residents. 6 of them had Below Poverty Line cards. Most of them were aged 17 years.

All the students had heard of blood donation. The most common sources of information were school/college followed by TV and doctor/hospital. While the responses for the source of information could be grouped into a few responses in the open ended question, the responses in the structured questionnaire was more specific like if in college whether it was in curriculum, by teachers, etc. or if was TV whether it was advertisement or program etc.

Only 2 had donated blood, one of them for a family / friend. With regard to the reason for not donating blood, the response groups were few in unstructured and were more specific in structured questionnaire (table 1). The number of respondents who had not answered, fell from 44.3% in unstructured to 27.8% in structured questionnaire. This decrease was statistically significant ($p < 0.05$).

All students knew about blood bank and some knew

about blood donation camps. But when the options were more (in the structured questionnaire), more number of responses could be elicited. This increase is statistically significant ($p < 0.05$).

Responses regarding the uses of donated blood were similar in both questionnaires, many citing accidents and surgery. 27.8% was ambiguous response of 'diseased person', while none responded to "others specify" in the structured questionnaire. The difference is statistically significant ($p < 0.01$). We could not include all the uses of donated blood in the structured questionnaire, which is a draw back in structured questionnaire.

Responses were very specific in the structured questionnaire with regard to knowledge about eligible person for donating blood. As multiple answers were correct, many answers were chosen. "This choosing pattern was because of too many choices were there leading to inattention." This information was picked up during the informal discussion with students after they had submitted the questionnaires.

Many thought that one can sell blood and few felt that one can buy blood. The difference to this 'yes' or 'no' question in the 2 types of questionnaires was not significant ($p > 0.05$).

In the unstructured questionnaire, many ambiguous answers were given for the effects of blood donation to the donors' body showing the amount of ignorance regarding this issue. This information could not be picked up in the structured questionnaire where many responded that it did not cause any disease.

Two thirds of the students knew a donor. Blood donation was recommended by 83.5% students in the unstructured questionnaire and 91.8% in the structured questionnaire. The difference was significant ($p < 0.05$) though it was a 'yes' or 'no' question.

All students had heard of eye donation. The source of information was more specific in the structured questionnaire. One third opted the 'others' option, which showed that the structured questionnaire was not complete.

Some specified eye bank while some thought hospitals accept eye donation. Some did not know.

With regard to 'who can donate eyes?', ambiguous answers decreased significantly in the structured questionnaire so did the number of responses.

Few thought that eyes can be bought and sold while very few knew a donor and most recommended eye donation. The difference to these 'yes' or 'no' questions in the 2 types of questionnaires was not significant ($p > 0.05$).

Almost all students had heard of kidney donation. Responses, with regard to the source of information and 'who can donate eyes?' were more specific in the structured questionnaire.

About one third thought that kidneys can be bought and sold. Only 1 respondent knew a donor and two thirds recommended kidney donation.

In response to their knowledge on donation of other organs, 47 (%) wrote heart, 14 (%) wrote liver and 8 (%) wrote that any organ can be donated.

In response to their feeling regarding organ donation, 31 (%) felt that it was life saving, 27 (%) felt that it would be very helpful and 11 (%) felt that it would reduce suffering of the recipient.

Regarding organ donation after death, 72 (%) felt that it should be done, 58 (%) felt that the recipients would be grateful and 43 (%) felt that it makes them feel good that they are helping someone even after death

Discussion

All first year MBBS students had heard about blood^{4,5,6} and eye donation while 1% had not heard about kidney

donation. Most had heard from television and school/college. Only 2% had donated blood. Many were afraid of blood donation due to fear of needle prick, ignorance and false beliefs. Most knew the use of donated blood, eye and kidney. Many were ignorant about the criteria to be met by the donor for donating blood, eye and kidney. Many thought that organs can be bought and sold. While a few thought that blood donation would make one weak, many were of the opinion that it would cause no harm. Many knew blood donors while only a few knew eye donors. Only 1% knew kidney donor. Many expressed their recommendation of blood donation and organ donation, especially after death.

Majority of students never donated blood. The various reasons stated were ignorance, fear of sickness / complications⁵

The proportion of students having adequate knowledge⁶ was 33.1% with the mean score of 12.2 ± 2 . Only 13.9% had ever donated blood and out of which, 64.8% of donors were first timers.

A majority, were unaware of the age group permitted to donate blood. 29.5% of nursing staff were not aware of blood donation interval of 3 months⁶. 38.6% of nurses were not informed about the minimum weight required for blood donation. 43.9% of the nurses had incomplete knowledge of the donor deferral criteria in the blood bank with respect to certain diseases.

With regard to comparison of responses to unstructured and structured questionnaires, no significant difference was seen for dichotomous questions (Yes or No type of responses).

Structured questionnaires were very useful for getting specific responses to questions. In response to 'Source of information' while many mentioned TV in unstructured questionnaire, we were able to get specific answers whether it was advertisement or program, etc in structured questionnaire. Similar results can be seen for questions like 'Who needs blood donation' or 'Who can donate blood', where their knowledge regarding specific criteria like age, weight, Hb%, etc can be assessed. However this may also lead to more of false positive responses. Hence a combination of both can be used eg for 'Who can donate blood' we can give clues regarding the criteria like age, weight, Hb% but the respondent will have to write the criteria by him/herself. The unstructured questionnaire produces responses that we would not have been thought about in structured questionnaires.

Hence in the ideal semi structured questionnaire a last option of 'Others; specify' should be included so as not to miss out on responses due to lack of choices.

For the question 'Reason for not donating', 43% did not write any response in the unstructured questionnaire while only 27% did not write any response in the structured questionnaire. Non response to such questions may be attributed to the fact that though the respondents will know a response, they may find it difficult to articulate it in appropriate words hence leaving the question unanswered.

Some questions like 'Place of donation' though the same number of respondents have answered the question, the total number of responses is more in structured questionnaire, the respondents stop writing after one answer in unstructured questionnaire where as in a structured questionnaire multiple answers are commonly chosen.

Many ambiguous answers were found for questions like 'How will blood donation affect your body' or 'Who can donate eyes' where the respondents have understood the question incorrectly or have failed to articulate their responses appropriately. The choices in the structured questionnaire make them understand the question and they can choose the option that is nearest to their belief. An option of 'Others; specify' will help.

Conclusion

The knowledge regarding organ donation that is

blood, eye, kidney, etc is inadequate among first year medical students. They have false beliefs regarding organ donation and the practice of blood donation is low.

Unstructured questionnaire helps us find information that we may not have considered as a possible response. Responses are more in a structured questionnaire and are also more specific. A semi structured questionnaire is ideal for KAP studies where options for own responses is present.

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How to Cite this article :

Parasappa B, Vinay M, Jahnavi R. Significance of types of questionnaires in assessing knowledge, attitude & practice of organ donation. *J Educational Res & Med Teach*, 2013;1(1):31-6.

Funding: Declared none

Conflict of interest: Declared none