

Original Research Article

Knowledge and attitude about eye donation amongst anganwadi workers in a rural block of Pune district in India: a quasi experimental study

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ABSTRACT

Background: Corneal diseases constitute a significant cause of visual impairment and blindness in India. Corneal transplantation is a major solution for this. In order to increase the corneal transplants, motivation of rural population is must to increase eye donation rates. Anganwadi workers (AWWs) constitute a major potential source of information in rural areas which needs to be educated to increase the procurement of corneas. The aims and objectives of the study was to compare the knowledge and attitude about eye donation amongst AWWs in rural Pune before and after intervention.

Methods: The study was conducted in a randomly selected block of Pune. A pre-designed, pre-tested, anonymous, self-administered questionnaire was filled by the AWWs. A session on eye donation was conducted. The AWWs again filled the same questionnaire.

Results: Study comprised of 86 AWWs, seventy-one (%) AWWs were aware about eye donation. Media was the main source of information followed by doctors. About 25.6% workers knew that cornea is the part of eye used for transplant. Eyes can be donated within 6 hours of death was known to 61.6% participants. A significant increase in the knowledge and attitude about eye donation occurred after intervention and most of them were willing to pledge for their eyes.

Conclusions: Simple intervention in the form of lectures and short talks can make a significant change in the knowledge and attitude of AWWs.

Keywords: Eye donation, Knowledge, Attitude, Anganwadi workers

INTRODUCTION

Corneal diseases constitute a significant cause of visual impairment and blindness in India.¹ There are currently an estimated 15 million blind people in India. 6.8 million of these suffer from corneal blindness with vision less than 6/60 in at least one eye, and of these, about 1 million have bilateral corneal blindness.² According to national

programme for control of blindness, there is an addition of 25,000 to 30,000 corneal blindness cases every year in the country.³ If the present trend continues, it is expected that the number of cornea blind individuals in India will increase to 10.6 million by 2020.² The major causes of corneal blindness include trachoma, corneal ulceration following xerophthalmia due to vitamin A deficiency, ophthalmia neonatarum, use of harmful traditional

medicines, onchocerciasis, leprosy and ocular trauma.¹ Although strategies to prevent corneal blindness are likely to be more cost-effective, visual rehabilitation by corneal transplantation remains a major treatment option for restoring sight among those suffering from corneal blindness.⁴ The number of corneal transplants done annually are 25,000 as compared to 1,00,000 transplants required annually in India.⁵ The target for the collection of donated eyes in the year 2017-2018 was 50,000 and achievement was only 18,519.⁶ The need, therefore, is to educate the masses about eye donation in an effort to increase the procurement of corneas.¹

To increase procurement of corneas, raising the level of public education on eye donation is an important first step.⁴ As majority of the population of India lives in the rural region, this section of population is required to be motivated to increase the eye donation rates. Anganwadi workers (AWWs) are native of that village and village level health functionaries working for the betterment of health and nutrition of the village under ICDS programme.⁷ This can be a major potential force to increase eye donations in the rural population. Well informed AWWs could be expected to influence eye donation rates. Hence, this study was designed to assess the perception of AWWs towards eye donation and their willingness to pledge and motivate others for eye donation.

Objectives

To assess the knowledge and attitude about eye donation amongst AWWs in rural Pune. To compare their knowledge and attitude about eye donation before and after intervention.

METHODS

The study was a quasi-experimental study. Pune district is divided into 14 blocks/tehsils.⁸ The study was conducted in Bhor block which was randomly selected from these blocks of rural Pune. The study was approved by the Institutional Ethics Committee. In a monthly meeting of the AWWs of Bhor block; under the supervision of CDPO (Child Development Project Officer), Bhor, all the AWWs were informed about the study and their consent was obtained to participate in the study. The permission of CDPO was obtained before the start of the study.

Study duration

The study was done for a period of 3 months (August to October 2012).

A pre-designed, pre-tested, anonymous, self-administered questionnaire was used to collect the data. AWWs filled this questionnaire. The questionnaire included questions regarding knowledge of eye donation, source of information, knowledge of corneal transplantation,

awareness of eye banks in general. The questionnaire was developed from the study conducted by Bhandary et al in Malaysia and later on modified according to the current study participants.⁹ Questions were administered in local language and translation and back translation was done. The face and content validity of questionnaire was done by subject experts. Adequate time was given to solve the questions. A lecture was given to them regarding knowledge of eye donation, corneal transplantation, precautions taken for eye donation with the help of power point presentation. The question answer session was conducted after the lecture and their doubts regarding eye donation were cleared. The AWWs again filled-in the same questionnaire after the session.

The data collected was entered into master chart and analyzed by using microsoft excel sheet. The responses were compared and statistically analyzed by using Mc Nemar's chi-square test. P value <0.05 was considered significant.

RESULTS

Study comprised of 86 AWWs from the Bhor block of rural Pune. The age distribution of the AWWs was 20-30 years (11, 12.8%), 31-40 years (36, 41.86%), 41-50 years (20, 23.25%) and 51-60 years (19, 22.09%) with a mean age of 41 ± 9.7 SD years. Majority of them 76 (88.4%) were Hindu by religion. Most of the AWW 56 (65.12%) were educated above 10th standard. It was observed that 91% AWWs had heard about eye donation, media was the main source of information followed by doctors (Figure 1). Eight (9.3%) AWWs had pledged their eyes and 9 (10.5%) had already motivated others for eye donation.

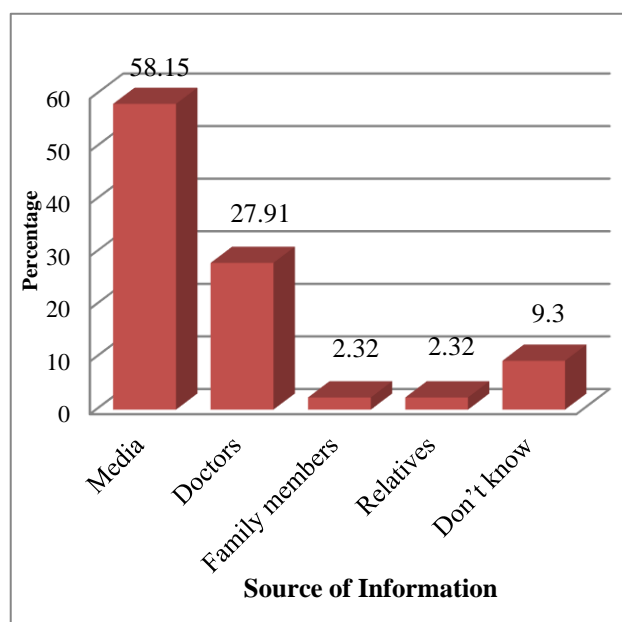


Figure 1: Distribution of AWWs according to the source of information for eye donation.

Table 1: Pre and post-test knowledge of AWWs about eye donation.

Questions	Responses	Pre-test N (%)	Post-test N (%)	Mc Nemar's χ^2 value	P value
When can eyes be donated	Correct response (after death)	45 (52.32)	58 (67.44)	5.33	<0.05
	Wrong response	41 (47.68)	28 (32.56)		
Whom to contact after death for eye donation	Correct (eye bank)	43 (50.00)	83 (96.52)	36.02	<0.001
	Others (ophthalm clinics, hospitals, don't know)	30 (34.89)	3 (3.48)		
Max time limit for eye donation after death	Correct response (within 6 hours)	53 (61.6)	86 (100)	31.03	<0.001
	Wrong response (>6 hours)	33 (38.4)	0		
Is there any age-criteria for eye donation	Correct response (no)	62 (72.10)	82 (95.36)	18.05	<0.001
	Wrong response (yes/don't know)	24 (27.90)	4 (4.64)		
Disfigurement of face after eye donation	Correct response (no)	61 (70.93)	81 (94.19)	16.41	<0.001
	Wrong response (yes/don't know)	25 (29.07)	5 (5.81)		
Care of eyes to be taken before eye donation (after death)	Correct response (yes)	33 (38.37)	82 (95.35)	47.02	<0.001
	Wrong response (no/ don't know)	53 (68.63)	4 (4.65)		
Part of eye used for transplant	Correct response (cornea)	22 (25.60)	81 (94.19)	57.02	<0.001
	Wrong response (whole eye, retina, don't know)	64 (74.40)	5 (5.81)		
Donor's written consent	Correct response (no)	70 (81.40)	21 (24.40)	48.43	<0.001
	Wrong response (yes)	16 (18.60)	65 (75.60)		
If the person has not pledged for eyes, can his relatives donate eyes after his death	Correct response (yes)	63 (73.26)	82 (95.35)	12.96	<0.001
	Wrong response (no)	23 (26.74)	4 (4.65)		

Table 2: Pre and post-test attitude of AWWs about eye donation.

Attitude about eye donation	Pre-test N (%)	Post-test N (%)	Mc Nemar's χ^2 value	P value
Willing to donate eyes	49 (56.98)	68 (79.07)	12	<0.001
Willing to motivate others for eye donation	72 (83.72)	81 (94.18)	3.76	<0.01

There was a major difference observed in the knowledge of AWWs before and after educational intervention which was statistically significant (Table 1).

It was observed that 45 (52.32%) AWWs were aware that eye donations were done only after death which significantly increased to 58 (67.44%) after the intervention. The contact place for eye donation is eye bank which was known to only 43 (50.00%) while 30 (34.89%) AWWs felt that hospital and eye clinics can also be contacted, this response increased to 83 (96.52%)

post intervention. Ideally eyes should be removed within 6 hours of death was known to almost all AWWs post intervention. Most of the AWWs knew that there is no age criterion for eye donation and it doesn't cause disfigurement of face.

Only 33 (38.37%) AWWs knew about care of eyes to be taken after death till the eye donation which significantly increased to 82 (95.35%) post intervention. Significantly 81 (94.19%) AWWs got to know that cornea was the transplanted structure after the intervention ($p < 0.001$).

Majority of AWWs, opined that donor's consent is mandatory and it should be expressed in written before death which significantly changed after the intervention ($p < 0.001$). Sixty-three (73.26%) AWWs were aware that if a person has not pledged his eyes, his close relatives can donate his eyes after death which changed to 82 (95.35%) post intervention.

There was a significant change in the attitude regarding eye donation due to intervention, most of them were willing to donate eyes and motivate others for eye donation. Nobility in the act of eye donation was the main motivational force according to 45 (52.33%) AWWs (Table 2).

DISCUSSION

The Indian statistics on eye donation shows that there is shortage of corneas as compared to the persons who are blind due to corneal diseases.¹⁰ Majority of Indian population lives in rural areas and in order to enhance eye donation rates it is necessary to sensitize rural community for eye donation. Awareness studies on eye donation in the Indian population reveal that illiteracy and rural residence are strong predictors of ignorance about eye donation.¹¹ AWWs are village level health functionaries and if they are educated regarding eye donation, it is expected to increase eye donation rates in rural community.

The mean age of study subjects in the current study was found to be 41 ± 9.7 SD years similar to a study in Malaysia (37.93 years) and to a study in Gujarat (38.17 years).^{9,12} Our study found that most of the AWWs 56 (65.12%) were educated above 10th standard similar to study in Malaysia (61.3%) and more than the study in Gujarat where only 32.4% had completed secondary education.^{9,12} The current study found that most of the AWWs were aware about eye donation (91.0%) which was similar to the finding in a study conducted among medical students from Haryana (96.6%) and greater than the study conducted in the rural population of Andhra Pradesh (30.7%) and adult population of southern India (50.69%).^{4,13,14} The higher level of awareness in our study might be due to higher education level of study participants and they are village level health functionaries who work in health sector might be another reason for higher level of awareness. But their level of knowledge regarding eye donation was not optimal.

A study conducted by Bhandary et al shows that the major source of information was mass media (55.4%) which was almost similar to our study (58.2%) and the study in rural population of Andhra Pradesh.^{4,9} Mass media can be the best choice to spread the message, so that individuals can understand their roles and responsibilities regarding eye donation.

In the present study, 52.3% study subjects knew that the eyes could be donated after death. It was lower than the

study conducted among medical students by Dhaliwal (79.6%) and by Singh et al (99.4%) but was greater than study by Khan et al (47%).^{1,10,15} This higher level of knowledge shows that the medical students are better informed. Our study found that 61% of AWWs knew that the eyes should be donated within 6 hours after death which was similar to the study conducted in medical students in Delhi (63.3%) and Haryana (61%).^{10,13} This shows that awareness of AWWs regarding time of eye donation which was similar to the medical students may help in getting donated eyes at an optimal time.

In the present study, 72% AWWs were aware that there is no age-criteria for eye donation which was greater than the study by Manhas et al (22%) in OPD patients and it doesn't cause any disfigurement of face (70%) which was greater to that of study in paramedical workers (27%).^{16,17} This shows that AWWs can be able to alter these misconceptions regarding eye donation in rural community. Our study observed that only 38.3% AWWs knew about care of eyes to be taken after death for donating eyes which changed to 95.3% after intervention. It is a matter of concern as care of eyes should be taken after the eye bank team is been informed of a donor's death in order to get the donated eyes in optimum condition for corneal transplantation.

The current study found that 81.4% of AWWs believed that donor's written consent is required before death for eye donation which later changed after intervention which was similar to study by Khan et al (79.2%) but was greater than the study in nursing college students in Bangalore (47.3%).^{15,18} and less than the study by Manhas et al (100%) in OPD patients.¹⁶ Donor's consent is not mandatory but the consent of family member/relatives is required after death for eye donation. The study observed that 73.26% AWWs were aware that if the person has not pledged for eyes, his relatives can donate eyes after his death was similar to the study in paramedical workers and greater than the study by Bhandary et al (55.6%), the study by Gupta et al (8.5%) and by Khan et al (56.5%).^{9,15,17,18} The AWWs must know about the legal aspects of eye donation as they will motivate and counsel the family members regarding eye donation.

As per the results of present study, most of AWWs (79%) were willing to donate eyes post intervention which was almost similar to the nursing college students in Bangalore (82.9%) but much greater than the study in urban population of Hyderabad (44.9%).^{18,19} This indicates that educational intervention amongst AWWs will help in motivating them and the rural community for eye donation. A significant change in knowledge about eye donation post-interventional talk in present study was similar to that of Swathi et al study.²⁰

Limitations

Post-test was taken immediately after the intervention; hence the retention of knowledge about eye donation

amongst AWWs could not be ascertained. Further studies are needed to assess the retention of knowledge among them.

CONCLUSION

The present study shows that interventions in the form of lectures and short talks involving audio visual aids can make a significant change in the knowledge and attitude of AWWs which may spread the knowledge about eye donation in rural community. This might enhance eye donation rates from the rural population which largely remains untapped.

Recommendations

Rural health workers like AWWs should periodically motivate the rural population for eye donation. Increasing the awareness and knowledge of rural health workers like AWWs, ASHAs might help in increasing the eye donation rates.

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