

**Original article:**

## **Study of assessment of cataract awareness in rural population in India**

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**Abstract:**

**Introduction:** Cataracts develop slowly to cause loss of vision, and can render the person completely blind if it is left untreated.<sup>1</sup> Cataracts usually affect both eyes, but they will generally develop in one eye before the other. Cataract is more common with increasing age. Other less common causes of cataract are injury, other eye diseases (uveitis) and diabetes, and it sometimes occurs in children<sup>6</sup>.

**Methodology:** The study was conducted in District hospital, Mookambika Modi Eye hospital, Akashara Eye Foundation of Tumkur, Karnataka. This setting was chosen on the basis of investigator's feasibility, in terms of availability and accessibility of Clients. According to Polit and Hungler, sample is subset of a population that is selected to participate in the research study. It is a portion of population which represents the entire population. In this study, sample consists of 50 clients attending the eye department of selected hospitals of Tumkur.

**Results:** It is observed from the present study that the mean as well as the standard deviation of the knowledge on awareness of cataract during the pretest is 7.96 and 2.18 and during the posttest it is 17.42 and 1.94. The t-value is 44.162. The P-value is <0.001 which shows that it is statistically highly significant.

**Conclusion:** The study shows that the clients are having inadequate awareness (27.26%) on cataract.

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**Introduction**

Cataracts develop slowly to cause loss of vision, and can render the person completely blind if it is left untreated.<sup>1</sup> Cataracts usually affect both eyes, but they will generally develop in one eye before the other. Senile cataracts (cataracts that develop in the elderly due to the ageing process) usually start with initial opacity in the lens, followed by swelling of the lens, and then shrinkage of the lens - resulting in a complete loss of transparency<sup>2</sup>. This study was also demonstrated exponential increase in vision loss with increasing age .It was estimated that 1.67 million Australian aged over 50 years were affected by age related cataract in 2001 and this number projected to increase to 2.74 million by

year 2021.<sup>3</sup> Moreover, with time the cataract cortex liquefies to form a milky white fluid in a Morgagnian cataract, which can cause severe inflammation if the lens capsule ruptures and leaks.<sup>5</sup> Globally there are at least 16 million people who are blind from cataract. It is estimated that in Africa and Asia at least one person per 1000 population goes blind from cataract every year, i.e., 600 000 per year in Africa and 900 000 per year in India. Unoperated cataract has been shown to be the major cause of blindness, accounting for 40%-80% of all causes of blindness in the available population-based surveys. Cataract is more common with increasing age. Other less common causes of cataract are injury, other eye diseases

(uveitis) and diabetes, and it sometimes occurs in India, a developing country faces many challenges in rendering ophthalmic health needs. Awareness is determined by factors within the health system (e.g., are the services well-known to communities and first-line health workers?) as well as factors such as patient or family education level. It is likely that people who are literate or have access to sophisticated technology (e.g., television or cell phones) are more aware of small decreases in vision than people without these advantages. In Kuper and colleagues' study, the cases were not only poorer than controls; they were significantly less likely to be literate and educated. Could these factors have affected their awareness of cataract and cataract surgery?<sup>7</sup>

**Methodology**

The study was conducted in District hospital, Mookambika Modi Eye hospital, Akashara Eye Foundation of Tumkur, Karnataka. This setting was chosen on the basis of investigator's feasibility, in terms of availability and accessibility of Clients. According to Polit and Hungler, sample is subset of a population that is selected to participate in the research study. It is a portion of population which represents the entire population. In this study, sample consists of 50 clients attending the eye department of selected hospitals of Tumkur.

**Results**

**Table 1 – Comparison between pre and post- test results of the clients on awareness of cataract.**

**N = 50**

Knowledge score	Mean	SD	t-value	P-value	Inference
Pre-test	7.96	2.18	44.162	<0.001	HS
Post-test	17.42	1.94			

HS: Highly statistically significant

children<sup>6</sup>.

**Sample Size**

The study originated with a sample of 50 clients as a sample size for explicating the effectiveness of self instructional module on awareness of cataract among clients between 40-80 years attending the eye department in selected hospitals of Tumkur.

The structured questionnaire consisted of two parts:

**Part I:** This part deals with demographic characteristics of the clients such as age, religion, type of family, education, occupation, monthly family income etc and this was not scored but used for descriptive analysis.

**Part II:** It consists of 25 structured questionnaire to assess the knowledge on awareness regarding cataract. Each correct answer was given a score of one (1) and the wrong answer was given a score of zero(0).

**Score interpretation**

The instrument consists of 25 multiple choice questions regarding cataract. The maximum score was 25 and the minimum score was 0. Based on the scoring the percentage of knowledge was calculated using the formula

$$\text{Obtained score} / \text{total score} \times 100$$

The scores were interpreted as follows

<50- Inadequate

51 to 75- Moderately adequate

>75- Adequate

It is observed from the present study that the mean as well as the standard deviation of the knowledge on awareness of cataract during the pretest is 7.96 and 2.18 and during the posttest it is 17.42 and 1.94. The t-value is 44.162. The P-value is <0.001 which shows that it is statistically highly significant.

**Table 2 : Association between the pre test level of knowledge and socio-demographic characteristics**

**N= 50**

Demographic variables	Categories	Pre-test knowledge score		Chi-square value	df	P-value	Inference
		Below median	Above median				
Age (yrs)	40-55	10	6	0.804	2	0.669	NS
	56-70	10	9				
	71-80	7	8				
Sex	Male	18	13	0.534	1	0.461	NS
	Female	9	10				
Religion	Hindu	15	11	1.818	2	0.403	NS
	Muslim	5	8				
	Christian	7	4				
Type of family	Joint	13	7	1.624	1	0.203	NS
	Nuclear	14	16				
Education	Primary	6	6	2.750	2	0.253	NS
	Higher secondary	8	11				
	Graduate & above	13	6				
Occupation	Government service	9	7	1.160	2	0.560	NS
	Private service	10	6				
	Self employed	8	10				
Total family income per month (Rs)	< 5000	7	9	1.010	2	0.603	NS
	5001-8000	9	6				
	> 8000	11	8				
Total family members	3-5	9	4	2.348	2	0.309	NS
	6-8	11	9				
	> 8	7	10				
Food habits	Vegetarian	12	11	0.057	1	0.811	NS
	Non-vegetarian	15	12				

Note: 1. NS: Not significant ( $P>0.05$ );

2. Critical value for 1 degree of freedom at 5% level of significance = 3.841

3. Critical value for 2 degree of freedom at 5% level of significance = 5.991

It is evident from the present study that during the pretest the Chi- Square value computed for the age, sex, religion, Type of family, education, occupation, total family income, total family members, food habits, with the level of knowledge is statistically not significant which indicates that there is no association between the knowledge score and the demographic variables in relation to the knowledge.

**Table 3: Association between the pre test level of knowledge and socio-demographic characteristics**

**N = 50**

Demographic variables	Categories	Post-test knowledge score		Chi-square value	df	P-value	Inference
		Below median	Above median				
Age (yrs)	40-55	10	6	1.477	2	0.478	NS
	56-70	9	10				
	71-80	10	5				
Sex	Male	19	12	0.363	1	0.547	NS
	Female	10	9				
Religion	Hindu	17	9	1.385	2	0.500	NS
	Muslim	6	7				
	Christian	6	5				
Type of family	Joint	14	6	1.970	1	0.160	NS
	Nuclear	15	15				
Education	Primary	7	5	0.433	2	0.805	NS
	Higher secondary	10	9				
	Graduate & above	12	7				
Occupation	Government service	8	8	0.625	2	0.732	NS
	Private service	10	6				
	Self employed	11	7				
Total family income per month (Rs)	< 5000	8	8	2.093	2	0.351	NS
	5001-8000	11	4				
	> 8000	10	9				

Total family members	3-5	8	5	3.224	2	0.199	NS
	6-8	14	6				
	> 8	7	10				
Food habits	Vegetarian	13	10	38.000	1	0.845	NS
	Non-vegetarian	16	11				

Note: 1. NS: Not significant ( $P > 0.05$ );

2. Critical value for 1 degree of freedom at 5% level of significance = 3.841

3. Critical value for 2 degree of freedom at 5% level of significance = 5.991

It is evident from the present study that during the post test the Chi- Square value computed for the age, sex, religion, Type of family, education, occupation, total family income, total family members, food habits, with the level of knowledge is statistically not significant which indicates that there is no association between the knowledge score and the demographic variables in relation to the knowledge.

#### Discussion

The present study was under taken to assess the awareness on cataract among the clients 40-80 years. The first objective was to assess the pretest awareness of the clients between 40-80 years regarding cataract who are attending the eye department. In the present study it was found that during the pretest the awareness score of the clients on cataract was inadequate. The overall mean score of the client awareness on cataract was 7.96 with a standard deviation of 2.18 and mean percentage of 31.84% and the range was 4-13.

The second objective was to assess the posttest awareness of the clients between 40-80 years regarding cataract who are attending the eye department. In the present study it was found that during the posttest the awareness score of the 38 clients on cataract was moderately adequate and of 12 clients was adequate. The overall mean score of

the client awareness on cataract was 17.42 with a standard deviation of 1.94 and mean percentage of 69.68% and the range was 14-25.

The third objective was to assess the Effectiveness of self instructional module on the awareness of the clients between 40-80 years regarding cataract. It is observed from the present study that the mean as well as the standard deviation of the knowledge on awareness of cataract during the pretest is 7.96 and 2.18 and during the posttest it is 17.42 and 1.94. The t-value is 44.162. The P-value is  $< 0.001$  which shows that it is statistically highly significant. The percentage of increase in knowledge is 118.84 which shows the effectiveness of the self instructional module.

The fourth objective was to find association of the awareness score of clients between 40-80 years on cataract with selected demographic variables.

It is evident from the present study that during the pretest and posttest the Chi- Square value computed for the age, sex, religion, Type of family, education, occupation, total family income, total family members, food habits, with the level of knowledge is statistically not significant which indicates that there is no association between the knowledge score and the demographic variables in relation to the knowledge.

### **Conclusion**

The study shows that the clients are having inadequate awareness (27.26%) on cataract.

### **Nursing Education**

Nursing education helps the student with adequate knowledge and skills to fulfill their duties and responsibilities in the nursing field. The awareness on cataract should be emphasized among the nursing students as it will help them to make the public aware about cataract and its management and help to prevent the blindness occurring because of cataract. Students should have up to date knowledge about cataract. This can be achieved only through structured teaching programme or through self instructional health module prepared by the health professionals. All in service education program should include the specific area like causes, risk factors, sign and symptoms, diagnostic evaluation, its management and care.

### **Nursing Research**

In India, only few research studies have been done on assessment of awareness of cataract and its management. All nursing personnel must join hands to provide scientifically tested material or programs to evolve a time bound plan for cataract and its management. This study revealed that there is deficit in awareness of the clients regarding cataract hence they are at a high risk of contracting the disease, so there is need for extended nursing research on cataract and its management.

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### **Limitations**

- ❖ The study was conducted only on clients between 40-80 years of age.
- ❖ The study was limited to assess the awareness of the clients regarding cataract.
- ❖ Since the sample was only 50, the findings cannot be generalized to all the people.
- ❖ Awareness of the clients was assessed using structured questionnaire only. Other methods like observation and checklist were not used.

### **Recommendations**

- ❖ A similar study can be conducted on a large sample to generalize the study findings.
- ❖ A similar study can be conducted among the health care professionals.
- ❖ Mass and individual education in regional languages to enlighten the students and general public can be organized at all the level of health facilities.
- ❖ Comparative study may be conducted to find out the similarities or differences in knowledge between 1<sup>st</sup> year B.Sc nursing students and 4<sup>th</sup> year B.Sc nursing students.
- ❖ Similar study can be conducted on other students studying in various other professional colleges.

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