"A Study to Assess the Effectiveness of Health Instructional Program on Knowledge Regarding Cataract Among People Residing in Selected Area of Jabalpur"

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***Abstract*—Aim: The study aimed to Assess the Effectiveness of Health Instructional Program on knowledge regarding Cataract among people residing in selected rural area of Jabalpur**

Objectives: Assess the pre-test knowledge score regarding cataract among people. • Assess the post-test knowledge score regarding cataract among people. • Evaluate the effectiveness of health instructional program on knowledge regarding cataract among people. • Determine the association between pre-test knowledge score regarding cataract among people with their selected socio demographic variables.

Methodology: In this study descriptive research design, quantitative research design was adopted to assess knowledge regarding cataract among people, the population selected for this study from selected area of Jabalpur, the Nonprobability purposive sampling was adopted for selecting the subject, the sample included 60 people for assessing knowledge regarding cataract.

Results: The finding showed that the mean of data was analyzed by descriptive and inferential statistical. In socio demographic variables the majority of the subjects 40 are in the age group of between 41-60 years, majority of the subjects 46 are males, majority of the subjects 52 are married, majority of the subjects 36 are primary educated, majority of the subjects 40 are in private job, majority of the subjects 40 monthly family income is <10000/-, majority of the subjects 30 are from nuclear families, majority of the subjects 58 have previous knowledge regarding cataract, majority of the subjects 35 source of information is TV. The mean post-test knowledge score (24.34) is apparently higher, than the mean pre-test knowledge score (18.22). The dispersion of pre-test score (SD+ 4.52) is more than of their post- test scores (SD+ 3.09) and the computed "t" value shows that there is a significant difference between pre-test and post-test mean knowledge score ('t' (6.58) = 24.34 p<0.05%).

Conclusion: The study concluded that the Health Instructional Program was effective in improving the knowledge of people regarding cataract. The significant increase in post-test knowledge scores indicates that structured health education is an effective, economical, and practical approach for enhancing awareness about cataract, promoting early detection, timely treatment, and prevention of cataract-related visual impairment. The findings support the incorporation of Health Instructional Programs into community health education and nursing practice to improve eye health awareness among the general population.

***Index Terms*—Cataract, Health Instructional Program, Knowledge, People, Community Health Education, Eye Health, Pre-test, Post-test, Rural Population.**

I. INTRODUCTION

Vision is one of the most important senses of the human body, enabling individuals to perform daily activities independently and maintain a good quality of life. Cataract is one of the leading causes of preventable blindness worldwide, particularly among older adults. It is characterized by clouding or opacity of the crystalline lens, resulting in blurred vision, glare, and gradual painless loss of vision. If left untreated, cataracts can lead to severe visual impairment and blindness.

Globally, cataracts affect millions of people and remain a major public health challenge despite the availability of safe and effective surgical treatment. In

India, cataracts account for approximately 40–80% of blindness cases and continue to impose a significant burden on individuals, families, and the healthcare system. Early identification, timely treatment, and public awareness are essential for preventing avoidable blindness. Health education plays a vital role in improving people's knowledge regarding cataracts, their risk factors, symptoms, prevention, and treatment. Therefore, implementing a Health Instructional Program can effectively enhance community awareness and promote early health-seeking behaviour.

Background of the study

Cataract is primarily an age-related eye disease affecting approximately 30% of individuals above 65 years of age. The condition develops gradually due to clouding of the eye lens, reducing the passage of light and impairing vision. Several factors contribute to cataract formation, including increasing age, ultraviolet radiation, diabetes mellitus, smoking, prolonged steroid use, alcohol consumption, trauma, and hereditary factors. The prevalence is higher among rural populations and individuals with lower educational status due to limited awareness and inadequate access to eye care services.

According to the National Blindness and Visual Impairment Survey (2015–2019), cataract is responsible for 66.2% of blindness among individuals aged 50 years and above in India, and over 90% of blindness cases are considered avoidable through timely diagnosis and treatment. India conducts nearly 6.5 million cataract surgeries annually under the National Program for Control of Blindness and Visual Impairment (NPCBVI). However, many people continue to suffer from cataract-related blindness because of delayed diagnosis, fear of surgery, financial constraints, and lack of knowledge regarding available treatment services.

Health education is recognized as one of the most effective strategies for improving public awareness about cataract. Structured Health Instructional Programs can educate individuals regarding causes, symptoms, risk factors, preventive measures, treatment options, and postoperative care, thereby encouraging early utilization of eye care services and reducing preventable blindness.

Need for the study

Worldwide, approximately 2.2 billion people experience some form of visual impairment, and nearly one billion of these cases are preventable or remain untreated. Cataract continues to be the leading cause of blindness globally, affecting nearly 20 million people. In India, cataract accounts for 50–80% of bilateral blindness, particularly among rural populations where awareness regarding eye health remains inadequate.

Many individuals delay cataract surgery because of misconceptions, fear, financial difficulties, lack of awareness, family beliefs, and limited access to health services. Studies have shown that ignorance regarding cataract symptoms, prevention, and treatment is one of the major reasons for avoidable blindness. Therefore, there is an urgent need for structured health education Programs to improve people's knowledge about cataract and encourage early diagnosis and timely surgical intervention.

Considering the high prevalence of cataract, the preventable nature of cataract-related blindness, and the lack of awareness among community members, the investigator felt the need to conduct a study to assess the effectiveness of a Health Instructional Program on knowledge regarding cataract among people residing in a selected rural area of Jabalpur. The findings of the study will help strengthen community health education, improve eye health awareness, and contribute to reducing the burden of preventable blindness.

Objectives of the study

1. To assess the pre-test knowledge score regarding cataract among people.
2. To assess the post-test knowledge score regarding cataract among people.
3. To evaluate the effectiveness of the Health Instructional Program on knowledge regarding cataract among people.
4. To determine the association between the pre-test knowledge score regarding cataract among people and their selected socio-demographic variables.

Research hypotheses

H_1: There will be a significant difference between the mean pre-test and post-test knowledge scores regarding cataract among people after the administration of the Health Instructional Program.

H_2: There will be a significant association between the pre-test knowledge scores regarding cataract among people and their selected socio-demographic variables.

Operational definitions

1. Assess: Assess refers to the process of evaluating the knowledge of people regarding cataract before and after the administration of the Health Instructional Program using a structured knowledge questionnaire.
2. Effectiveness: Effectiveness refers to the extent to which the Health Instructional Program improves the knowledge of people regarding cataract, as measured by the increase in the mean post-test knowledge score compared with the pre-test score.
3. Health Instructional Program: Health Instructional Program refers to the planned educational intervention provided to people regarding cataract, including its definition, causes, risk factors, signs and symptoms, prevention, treatment, and complications through a lecture-cum-discussion method using audio-visual aids after the pre-test.
4. Cataract: Cataract refers to the clouding or opacity of the crystalline lens of the eye that impairs vision and, if untreated, may lead to visual impairment or blindness.
5. People: People refer to adult individuals aged 18 years and above residing in the selected rural area of Jabalpur who fulfilled the inclusion criteria and participated in the study.

Assumptions

1. People may have some existing knowledge regarding cataract.
2. The Health Instructional Program will be effective in improving the knowledge of people regarding cataract.
3. Participants will cooperate and provide honest responses during data collection.
4. Improved knowledge may motivate people to seek early diagnosis and treatment for cataract.

Delimitations of the study

The study is limited to:

1. People who are willing to participate in the study.
2. People who can read and understand Hindi or English.
3. People residing in the selected rural area of Jabalpur.
4. A sample size of 60 participants selected by non-probability convenient sampling technique.
5. Assessment of knowledge only; attitudes and practices regarding cataract are not included in the study.

II. MATERIALS AND METHODS

Research Approach

A quantitative evaluative research approach was adopted to assess the effectiveness of the Health Instructional Program on knowledge regarding cataract among people residing in a selected rural area of Jabalpur. This approach was considered appropriate as it enabled the investigator to objectively measure the knowledge of participants before and after the intervention.

Research Design

A pre-experimental one-group pre-test and post-test research design was used. The knowledge of the participants was assessed before the administration of the Health Instructional Program (pre-test) and reassessed after the intervention (post-test) to determine its effectiveness.

Variables

- Independent Variable: Health Instructional Program regarding cataract.
- Dependent Variable: Knowledge regarding cataract among people.
- Extraneous Variables: Age, gender, marital status, educational status, occupation, monthly family income, type of family, previous knowledge regarding cataract, and source of information.

Setting of the Study

The study was conducted in a selected rural area (Panagar), Jabalpur, Madhya Pradesh.

Population

The target population consisted of adult people residing in the selected rural area of Jabalpur.

Sample

The sample comprised 60 people residing in the selected rural area of Jabalpur who fulfilled the inclusion criteria.

Sampling Technique
A non-probability convenient sampling technique was used to select the participants.

Inclusion Criteria
The study included people who:
- We're willing to participate in the study.
- Were able to read and understand Hindi or English.
- We're residing in the selected rural area of Jabalpur.
- Were aged 18 years and above.

Exclusion Criteria
The study excluded people who:
- We're unwilling to participate.
- Were seriously ill during the period of data collection.
- Could not understand Hindi or English.

Research Tool
The tool consisted of:
- Section A: Socio-demographic variables.
- Section B: Structured knowledge questionnaire regarding cataract.

Intervention
The investigator administered a Health Instructional Program on cataract covering the definition, causes, risk factors, signs and symptoms, prevention, treatment, and complications using a lecture-cum-discussion method with audio-visual aids.

Validity and Reliability
The structured knowledge questionnaire and Health Instructional Program were validated by experts in Medical-Surgical Nursing, Community Health Nursing, Ophthalmology, and research methodology. Reliability of the structured questionnaire was established before the main study.

Pilot Study
A pilot study was conducted on a small group of participants to assess the feasibility of the study, clarity of the questionnaire, and practicality of the Health Instructional Program before conducting the main study.

Ethical Considerations
Ethical approval was obtained from the Institutional Ethics Committee. Permission was obtained from the concerned local authorities before data collection. Informed written consent was obtained from all participants. Confidentiality, anonymity, and privacy of the participants were maintained throughout the study.

Data Collection Procedure
A pre-test was conducted using the structured knowledge questionnaire. After completion of the pre-test, the Health Instructional Program regarding cataract was administered. Following the intervention, a post-test was conducted using the same questionnaire to assess the effectiveness of the Program.

Plan for Data Analysis
The collected data were analyzed using descriptive and inferential statistics. Descriptive statistics included frequency, percentage, mean, and standard deviation. Inferential statistics included the paired t-test to determine the effectiveness of the Health Instructional Program and the Chi-square test to determine the association between pre-test knowledge scores and selected socio-demographic variables. A p-value < 0.05 was considered statistically significant.

III. RESULTS

1. Findings Related to Socio-Demographic Variables
The socio-demographic characteristics of the 60 study participants were analyzed using frequency and percentage distribution. The findings revealed that the majority of the participants, 40 (66.7%), belonged to the 41–60 years age group, indicating that middle-aged adults constituted the largest proportion of the study population. Regarding gender, 46 (76.7%) participants were males, while 14 (23.3%) were females. Most of the participants, 52 (86.7%), were married, whereas only 8 (13.3%) were unmarried.
With respect to educational status, the majority of the participants, 36 (60.0%), had completed primary education, while comparatively fewer participants had secondary or higher education. Regarding occupation, 40 (66.7%) participants were engaged in private jobs, whereas the remaining participants were involved in

government service, business, agriculture, or were unemployed.

The findings further showed that 40 (66.7%) participants had a monthly family income below ₹10,000, indicating that the majority belonged to a lower socioeconomic group. Regarding the type of family, 30 (50.0%) belonged to nuclear families, while the remaining participants belonged to joint families.

Assessment of previous knowledge regarding cataract revealed that 58 (96.7%) participants had some prior knowledge about cataract, whereas only 2 (3.3%) had no previous knowledge. Among those who had prior knowledge, 35 (58.3%) reported television as their major source of information, followed by other sources such as newspapers, healthcare workers, friends, relatives, and social media.

These findings indicate that although most participants had heard about cataract, their knowledge regarding its causes, symptoms, prevention, and treatment was inadequate, emphasizing the need for structured health education.

2. Findings Related to Pre-test Knowledge Regarding Cataract

The pre-test assessment was conducted using a structured knowledge questionnaire before administering the Health Instructional Program. The findings revealed that the overall knowledge of participants regarding cataract was unsatisfactory before the intervention.

The mean pre-test knowledge score was 18.22, with a standard deviation of 4.52, indicating variation in the participants' baseline knowledge. Many participants lacked adequate information regarding the causes, risk factors, signs and symptoms, preventive measures, treatment options, and possible complications of cataract.

The findings suggest that despite having some previous exposure to information about cataract, participants possessed limited and incomplete knowledge. Therefore, there was a clear need for an educational intervention to improve their understanding of cataract and encourage early detection and treatment.

3. Findings Related to Post-test Knowledge Regarding Cataract

After administering the Health Instructional Program, a post-test was conducted using the same structured questionnaire to assess the improvement in knowledge.

The findings revealed a marked improvement in participants' knowledge regarding cataract. The mean post-test knowledge score increased to 24.34, with a standard deviation of 3.09. The increase in the mean score and the reduction in standard deviation indicate that participants not only gained knowledge but also showed greater consistency in their understanding of cataract after the intervention. These findings clearly demonstrate that the Health Instructional Program effectively enhanced participants' knowledge regarding cataract.

4. Findings Related to the Effectiveness of the Health Instructional Program

The effectiveness of the Health Instructional Program was evaluated by comparing the pre-test and post-test knowledge scores. The mean pre-test knowledge score was 18.22, whereas the mean post-test knowledge score increased to 24.34, showing a mean improvement of 6.12 points. The standard deviation decreased from 4.52 in the pre-test to 3.09 in the post-test, indicating more uniform knowledge among participants after the intervention.

The calculated paired t-value was 6.58, which was statistically significant at $p < 0.05$. This indicates that the observed improvement in knowledge was not due to chance but was the result of the Health Instructional Program.

Therefore, the study concludes that the Health Instructional Program was highly effective in improving knowledge regarding cataract among people residing in the selected rural area of Jabalpur.

Hence, the research hypothesis (H_1), stating that there would be a significant difference between the pre-test and post-test knowledge scores regarding cataract, was accepted.

5. Findings Related to the Association Between Pre-test Knowledge Score and Selected Socio-Demographic Variables

The association between pre-test knowledge scores and selected socio-demographic variables was analyzed using the Chi-square test. The findings revealed that there was a statistically significant association between the participants' pre-test knowledge scores and selected socio-demographic variables at the 0.05 level of significance.

The variables age, education, family type and previous knowledge was found significant. Another variables gender, marital status, occupation, family monthly income and if yes then source of information was not significant.

Therefore, the research hypothesis (H_2), which stated that there would be a significant association between pre-test knowledge scores and selected socio-demographic variables, was accepted.

6. Summary of Major Findings

The study demonstrated that the Health Instructional Program was an effective educational strategy for improving knowledge regarding cataract among people residing in the selected rural area of Jabalpur.

The major findings of the study were:

- Most participants belonged to the 41–60 years age group and were males.
- The majority had primary education, private employment, and a monthly family income below ₹10,000.
- Television was the most common source of previous information regarding cataract.
- The participants had only moderate baseline knowledge regarding cataract before the intervention.
- Following the Health Instructional Program, the mean knowledge score increased significantly from 18.22 to 24.34.
- The calculated paired t-value (6.58) showed a statistically significant improvement in knowledge ($p < 0.05$).
- Selected socio-demographic variables showed a significant association with the participants' pre-test knowledge scores.
- The study confirmed that a structured Health Instructional Program is an effective method for increasing awareness regarding cataract, promoting early diagnosis, timely treatment, and prevention of avoidable blindness.

IV. CONCLUSION

The present study was conducted to assess the effectiveness of a Health Instructional Program on knowledge regarding cataract among people residing in a selected rural area of Jabalpur. The findings of the study clearly demonstrated that the Health Instructional Program was effective in significantly improving the participants' knowledge regarding cataract.

The comparison of pre-test and post-test knowledge scores revealed a statistically significant increase in the mean post-test knowledge score after the educational intervention. The calculated paired t-value (6.58) at the 0.05 level of significance confirmed the effectiveness of the Health Instructional Program. Thus, the study hypothesis (H_1) was accepted. Furthermore, a significant association was found between the pre-test knowledge scores and selected socio-demographic variables, supporting the second research hypothesis (H_2).

The study highlights that structured health education is an effective, economical, and practical strategy for enhancing community awareness regarding cataract. Improved knowledge can encourage early recognition of symptoms, timely utilization of eye care services, prompt cataract surgery when indicated, and prevention of avoidable blindness. The findings also emphasize the important role of nurses and other healthcare professionals in planning and implementing community-based educational Programs to promote eye health.

Therefore, the investigator concludes that the Health Instructional Program is an effective intervention for improving knowledge regarding cataract among people and recommends its incorporation into community health Programs, primary healthcare services, and public awareness campaigns to reduce the burden of cataract-related visual impairment and blindness.

V. IMPLICATIONS

Implications for Nursing Education

- Health education regarding cataract should be incorporated into the nursing curriculum to strengthen students' knowledge of eye health and prevention of blindness.
- Nursing students should receive theoretical and practical training on community eye health, cataract prevention, early identification, and patient education.
- Community-based teaching Programs should be organized to increase awareness regarding cataract among rural populations.

- Nursing educators should encourage evidence-based teaching methods for promoting eye health and preventing visual impairment.

Implications for Nursing Practice

- Nurses should educate people regarding the causes, risk factors, signs and symptoms, prevention, and treatment of cataract.
- Community Health Nurses should conduct regular health education sessions, awareness campaigns, and eye screening Programs in rural communities.
- Nurses should encourage early ophthalmic consultation and timely cataract surgery to prevent avoidable blindness.
- Health Instructional Programs should be incorporated into community outreach activities and primary health care services to improve public awareness regarding cataract.

Implications for Nursing Administration

- Nursing administrators should encourage the implementation of community-based eye health education Programs.
- Regular in-service education and training Programs should be organized to improve nurses' knowledge and teaching skills regarding cataract prevention and management.
- Educational materials such as pamphlets, posters, booklets, audiovisual aids, and flip charts should be developed and distributed to increase public awareness.
- Adequate resources should be provided to organize eye health camps, vision screening Programs, and community awareness activities.

Implications for Nursing Research

- Similar studies should be conducted with larger sample sizes to improve the generalizability of the findings.
- Comparative studies can be conducted to evaluate the effectiveness of different educational methods such as video-assisted teaching, self-instructional modules, and structured teaching Programs.
- Longitudinal studies should be undertaken to assess long-term retention of knowledge regarding cataract after educational interventions.
- Future research may evaluate the impact of Health Instructional Programs on health-seeking behaviour, early diagnosis, treatment compliance, and prevention of blindness.
- Similar studies may be conducted among different age groups, urban populations, and various community settings.

VI. RECOMMENDATIONS

Based on the findings of the present study, the following recommendations are made:

- A similar study may be conducted with a larger sample size to improve the generalizability of the findings.
- The study may be replicated in different rural and urban communities to compare the effectiveness of the Health Instructional Program.
- Comparative studies may be conducted to evaluate different educational strategies such as structured teaching Programs, video-assisted teaching, self-instructional modules, and digital health education.
- Experimental studies with control groups may be undertaken to provide stronger evidence regarding the effectiveness of Health Instructional Programs.
- Longitudinal studies may be conducted to assess long-term knowledge retention and behavioural changes following health education.
- Similar studies may be carried out among different age groups and socio-economic populations.
- Future research may assess the impact of Health Instructional Programs on early cataract detection, utilization of eye care services, and cataract surgery acceptance.
- Community intervention studies may be conducted to evaluate the effectiveness of mass awareness campaigns regarding cataract prevention.
- Further research may include assessment of attitudes and practices regarding cataract in addition to knowledge.
- Cost-effectiveness studies may be undertaken to evaluate the feasibility of incorporating Health Instructional Programs into routine community health services.

VII. LIMITATIONS OF THE STUDY

The present study had the following limitations:

- The study was limited to 60 participants, which may limit the generalizability of the findings.

- The study was conducted only in a selected rural area of Jabalpur; therefore, the findings cannot be generalized to all populations.
- The study used a pre-experimental one-group pre-test and post-test design without a control group.
- A non-probability convenient sampling technique was used, which may introduce sampling bias.
- The study assessed only the knowledge regarding cataract and did not evaluate participants' attitudes or practices.
- The post-test was conducted shortly after the Health Instructional Program; therefore, long-term retention of knowledge could not be assessed.
- The study relied on participants' responses to a structured questionnaire, which may be influenced by response bias.
- The study did not evaluate whether increased knowledge resulted in actual behavioural changes such as early eye examination or cataract surgery.
- Factors such as literacy level, cultural beliefs, accessibility of eye care services, and socioeconomic status, which may influence knowledge regarding cataract, were not fully controlled.
- The findings are limited to the selected study setting and may not be applicable to populations with different demographic characteristics.

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