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A Study to Assess the Cognitive and Learning Capacity of Blind Children in Selected Special Schools in Bangalore

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Abstract: ***Background of the study: Number of legally blind children in India is 1.3 million, according to National Center for Health Statistics. Among that 96000 people are school age blind children. The assessments of abilities and education are very much neglected in India. Statement of the problem: A study to assess cognitive and learning capacity of blind children in selected special schools, Bangalore. Objectives: 1) Assess the cognitive and learning capacity of blind children. 2) Associate the cognitive and learning capacity of blind children with demographic variables. Hypotheses: All hypotheses will be tested at.05 level of significance. A) H_1: There will be adequate knowledge cognitive and learning capacity of blind children. B) H_2: There will be a significant association between cognitive and learning capacity of blind children and selected demographic variables. Method: The research design selected for the study was a descriptive approach which was best suited to find the knowledge regarding cognitive and learning capacity of blind children. The study was conducted in Nivedana School for blind, Bangalore. The samples included 100 students selected by non probability convenient sampling method. Data was selected by using interview schedule questionnaire. The questionnaire schedule comprised 2 parts. PART A: Consists of demographic characteristics of sample respondents seeking information such as age, family income, type of diet, area of residence etc. PART B: Consists of 30 statements pertaining to knowledge domain regarding cognitive and learning capacity assessment. It has 4aspects which is mentioned below: Result: Distribution of demographic variables of blind students with cognitive and learning capacity assessment: 1) Regarding age, majority, 43 (43%) of the students were in the age of 11 - 12 years, 29% of students were in the age of 8 - 10 years, 17% of students were in the age group of 10 - 11 years and 11% of the students were in the age group of 6 - 8 years of age. 2) On the basis of religion, 38 (38%) of the students were Muslims, 33 (33%) of students were Hindus, 29 (29%) of the workers were Christians. 3) When considering the residing area are 64 (64%) respondents belong to rural community and 36 (36%) of the students were from urban community. 4) While considering the types of family, majority 56 (56%) respondents belong to nuclear family, 44 (44%) of the students were belong to joint family. 5) Regarding the family income, majority 42 (42%) of the students" family income was Rs.1000 - 3000, 45 (45%) of the students" family income was between Rs.3001 - 7000, 9 (9%) of the students" family income was Rs.7001 - 11000, 4 (4%) of the workers" family income was Rs.11001 - 15000. 6) On the basis of health status, 78 (78%) of the students were healthy and 22 (22%) of the students were unhealthy. 7) On the basis of occupation of father, 39 (39%) were doing agriculture, 38 (38%) were having government job, 10 (10%) were doing business and 13 (13%) were kooli workers. The first objective of the study was to assess the cognitive and learning capacity of blind children in selected special school in Bangalore. The study finding reveals that 5% of the students have inadequate knowledge and cognitive capacities, 36% have moderately adequate cognitive and learning capacities and 2% of the students have adequate cognitive and learning capacities. It is evident the mean percentage of the score was maximum 48.78% in the area of cognitive and learning capacity assessment. The study was supported by a study conducted by Ajeet Bhardwaj in Delhi that 75% of the blind children have learning and cognitive deficiencies. The second objectives of the study were to associate between demographic variables and cognitive and learning capacity of the blind children. a) There was significant association found only between Health Status and cognitive and learning capacity ($\chi 2=10.52$ at $p<0.05$ level) b) There was non significant association found between age and cognitive and learning capacity ($\chi 2=3.247$ at $p<0.05$ level), Religion and cognitive and learning capacity ($\chi 2=2.40$ at $p<0.05$ level), Residence and cognitive and learning capacity ($\chi 2=4.38$at $p<0.05$ level), Occupation of the father and cognitive and learning capacity ($\chi 2=14.02$ at $p<0.05$ level), Types of Family and cognitive and learning capacity ($\chi 2=2.71$ at $p<0.05$ level), Family Income and cognitive and learning capacity ($\chi 2=25.99$ at $p<0.05$ level), The study was supported by a study conducted by Joseh Sarahbanda (2006). The study association between the capacities of blind children and demographic variables are non significant. The background of the students will not affect their cognition and learning. Conclusion: The study demonstrated that the cognitive and learning capacity of school aged blind children were moderately adequate. So they need further more assessment and teaching to improve the cognitive and learning capacities.***

1. Introduction

Childhood is a blissful state of innocence and joy, but this is often not for the children, who are disabled[1]. Throughout the period of growth and development, children need the stimulation of all senses. Eye obviously tops the list of sense organs[2]. Blindness refers to a condition where a person suffers from any of the following conditions namely,

- Total absence of sight
- Visual acuity not exceeding 6/60 or 20/200 (Snellen) in the better eye even with correction lenses or Limitation of the field of vision subtending an angle of 20 degrees or worse.3

Visual impairment is a significant health problem worldwide. The World Health Organization estimates that globally about 314 million people are visually impaired, of whom 45 million are blind in which 1.4 million are children[4]. Blindness is a devastating physical condition with deep emotional and economical implications. Various problems that the blind people face are problems in orientation and mobility, problems in social contact, problems in conversation, personality problems, psychological problems etc. There are certain coping strategies that a visually impaired person adopts, which includes positive strategies and negative strategies[5, 6] India is now home to the largest number of blind population, said reports. Pf the 15 million people across the globe who are blind, over 15 million are fro Indi. About 75% of these are avoidable blindness. While India needs 40, 000 optometrists, it has only 8000. On the other hand, while India needs 2.5 lakh donated eyes every year, the countries 109 eye banks (5

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in Delhi) manage to collect a maximum of just 25, 000 eyes, 30 % of which can't be used. There are also no regulatory laws to control the practice of optometry even though refractive error is one of the leading causes of blindness. Shortage of donated eye is becoming a huge problem. Of the 15 million blind people in India 26% are children suffer due to corneal disorders. But only 10, 000 corneal transplants are done every year due to shortage of donated eyes[7]. While those who are blind have to deal with substantial debilitating consequences, blindness also impacts family and community members. Because blindness imposes restrictions on the ability to move about and control self and environment, a high proportion (75%) of visually impaired people require assistance with everyday tasks. Sudden blindness of one individual in one family can become the tipping point for survival when they are impoverished to begin with. Assessment of children with visual or other impairment is difficult. They require individualized instructions from families and professionals who understand their abilities. The intellectual levels of blind children needs special assessments since this varies in some aspects comparing to normal children. As children grow their skills and abilities increasingly allow them to become masters of their own domain. But the blind children may possess some difficulties at the level of cognition and learning[8].

2. Methodology

The methodology of a research study is defined "as the way the pertinent information is gathered in order to answer the research question or analyses the research problem. It enables the research to project a blue print of the research undertaken" "research methodology involves a systematic procedure by which the researcher starts from the initial identification of the problem to its final conclusion. "[60] The present study is conducted **"A study to assess the cognitive and learning capacity of blind children in selected special schools in Bangalore".** This chapter deals with brief description of different steps undertaken by the Investigator for the study. It involves research approach, setting of the study, population, sample and sampling technique, selection of tool, development and description of the tool, content validity, ethical consideration, reliability, pilot study, data collection procedure and plan for data analysis.

Research Design and Approach: The research design refers to the researches overall plan for obtaining answers to the research questions and for testing the research hypothesis. The research design spells out the strategies that the researcher adopts to develop inform that is accurate, objective and interpretable. To achieve the aims and objective of the study the investigator had selected descriptive research design to assess the cognitive and learning capacity of school age blind children.

3. Results

In order to find a meaningful answer to the research problem, the data must be processed, analyzed in systematic and some orderly coherent fashion so that pattern and relationship can be discerned. A descriptive approach was adopted to 'A descriptive study to assess the knowledge and cognitive capacity of Blind children in selected special schools in Bangalore', of data collected from a sample of 100 blind students using structured questionnaire to assess the cognitive and learning capacity were tabulated and analyzed and interpreted by using descriptive and inferential statistics based on objectives of the study.

Objectives of the study:

1) To assess the cognitive and learning capacity of blind children.
2) To associate the cognitive and learning capacity of blind children with selected demographic variables.

Hypothesis:

H_1: There will be adequate cognitive and learning capacity in blind children

H_2: There will be significant association between cognitive and learning capacity of blind children with selected demographic variables.

The findings were presented under the following sections:

Section I: Description of the demographic characteristics of the respondents.

Section II; Aspect wise Distribution of assessment of cognitive and learning capacity of blind children.

Section III Association between cognitive and learning capacity of blind children with demographic variables such as age, religion, residence, type of family, family income of parents, health status and occupation of father.

4. Discussion

This chapter deals with the findings of study in meeting the objectives framed and hypothesis. This chapter deals with the discussion of the study with appropriate literature review, statistical analysis and the study based on the study objective. The aim of the present study was to assess the cognitive and learning capacity of blind children in selected special school in Bangalore. The results of the study as per objectives are discussed below.

Distribution of demographic variables of blind students with cognitive and learning capacity assessment

- Regarding age, majority, 43 (43%) of the students were in the age of 11 - 12 years, 29% of students were in the age of 8 - 10 years, 17% of students were in the age group of 10 - 11 years and 11% of the students were in the age group of 6 - 8 years of age
- On the basis of religion, 38 (38%) of the students were Muslims, 33 (33%) of students were Hindus, 29 (29%) of the workers were Christians.
- When considering the residing area are 64 (64%) respondents belong to rural community and 36 (36%) of the students were from urban community.
- While considering the types of family, majority 56 (56%) respondents belong to nuclear family, 44 (44%) of the students were belong to joint family.
- Regarding the family income, majority 42 (42%) of the students‟ family income was Rs.1000 - 3000, 45 (45%) of the students‟ family income was between Rs.3001 - 7000, 9 (9%) of the students‟ family income was Rs.7001 - 11000, 4 (4%) of the workers‟ family income was Rs.11001 - 15000.

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- On the basis of health status, 78 (78%) of the students were healthy and 22 (22%) of the students were unhealthy.
- On the basis of occupation of father, 39 (39%) were doing agriculture, 38 (38%) were having government job, 10 (10%) were doing business and 13 (13%) were kooli workers.

5. Conclusion

The following conclusions were drawn from the findings of the study. On analysis, the result revealed 11% of the children were between six to eight years of age.29% of the students were between eight to ten years, 17 % were between ten to eleven years and 43% were between eleven to twelve years.36% of the students were from urban areas and 64% of the students were from rural areas. On the basis of types of family 44% was from nuclear family and 56% was from joint family. On the basis of health status 78% of the student was healthy and 22% were unhealthy. Overall 12% of the students had inadequate cognitive and learning capacity, 83% of the students were having moderately adequate cognitive and learning capacities and 4% were having adequate cognitive learning capacities. There was a significant association between family income, health status and type of family. This found to be statistically significant at < 0.001 level, indicating that this factors directly influence the cognitive and learning capacities.

6. Nursing Implication

The investigator has drawn the following implications from the study which is of vital function in the field of nursing services, nursing education, nursing administration and nursing research.

Nursing service

1) The nurses need to take up the responsibility to create awareness among the public regarding prevention of blindness and care of blind people.
2) The nurse should use wide variety of intervention to prevent further complications of blindness in school age children and it is important for practicing nursing to evaluate this intervention.
3) The nurse places an important role in the development of cognitive capacities and improve the learning and education of blind children.

Nursing education

1) Nursing curriculum should provide an opportunities for the students to assess the cognitive and learning capacities of blind children in various special schools.
2) The study emphasizes the need for developing assessment skills among school age blind children.

Nursing research

1) The research findings provides as evidence based practice.
2) The study helps the nurse's researcher to develop insight into assessing techniques and material for blind children.

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Conflict of Interest: - The authors declare that there is no conflict of Interest**.**

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