



## A study to assess the effectiveness of a structured teaching program on knowledge regarding stem cell therapy, for autistic children, among the nurses working in pediatric unit of shri mahant indires hospital, dehradun.

<sup>1</sup>Ms. Ena Singh, <sup>2</sup>Mr. Praveen Kumar Sharma, <sup>3</sup>Ms. Bijayata Shrestha

<sup>1</sup>Postgraduate Student, Department of Child Health Nursing, Shri Guru Ram Rai College of Nursing, Dehradun, India

<sup>2</sup>Professor, Department of Child Health Nursing, Shri Guru Ram Rai College of Nursing, Dehradun, India

<sup>3</sup>Professor, Department of Medical-Surgical Nursing, Shri Guru Ram Rai College of Nursing, Dehradun, India

Email- <sup>1</sup>ena.singh4113@gmail.com, <sup>2</sup>pravubiju@gmail.com, <sup>3</sup>biju00@live.com

**Abstract:** Autism is a complex neurobehavioral condition which includes impairments in social interaction and development, language and communication skills combined with rigid, repetitive behaviors. There is no cure for ASD, impulsive, early treatments can make huge difference in improving behavior, skills and language development. Stem cell therapy for autism treatment has shown remarkably positive results.

**Objectives:** To assess the knowledge of pediatric nurses regarding stem cell therapy, to assess the effectiveness of STP regarding stem cell therapy and to associate the knowledge of pediatric nurses with the selected demographic variables.

**Methodology:** A quantitative research approach is used for the study. The research design adopted for the study is pre-experimental. The study was conducted in the pediatric unit of Shri Mahant Indires Hospital, Dehradun. The conceptual framework used for this study is based on the J.W. Kenny's open system model. Data was collected using non-probability convenient sampling technique. The data was collected to assess the effect of a structured teaching program on the knowledge of staff nurses regarding stem cell therapy for autistic children. It was done using a structured questionnaire. The collected data was analyzed and interpreted using descriptive and inferential statistics.

**Result:** There was a significant effect seen of the structured teaching program on the knowledge level of the staff nurses regarding stem cell therapy for autistic children. There was a significant association found between the post-test knowledge score with the age of the staff nurses.

**Conclusion:** It could be concluded that majority of staff nurses working in the pediatric unit had inadequate knowledge about the stem cell therapy for autistic children. At the same time, only a few of them had moderate knowledge regarding the topic. The structured teaching program was found to be effective to much extent, in enhancing their level of knowledge.

**Key Words:** Structured teaching program, stem cell therapy, autistic children.

### 1. INTRODUCTION:

Autism spectrum disorder (ASD) is a developmental disorder that affects communication and behavior. Although autism can be diagnosed at any age, it is said to be a 'developmental disorder' because symptoms generally appear in the first two years of life.

Studies conducted on those with autism show that it affects more boys than girls, and is most prevalent in developed countries. Autism diagnosis occurs across different age groups, though studies also indicate that autism is likely already present at the time of birth, although it is very difficult to form an early diagnosis. Stem cells have the remarkable potential to renew themselves. They can develop into many different cell types in the body during early life and growth. Researchers study many different types of stem cells. There are several main categories: the "pluripotent" stem cells (embryonic stem cells and induced pluripotent stem cells) and nonembryonic or somatic stem cells (commonly called "adult" stem cells). Pluripotent stem cells have the ability to differentiate into all of the cells of the adult body. Adult stem cells are found in a tissue or organ and can differentiate to yield the specialized cell types of that tissue or organ.



## 2. LITERATURE REVIEW:

Alok K Sharma, *et al.* (2020), concluded after conducting a study that, cell transplantation is emerging as a potential therapeutic strategy for ASD. The interventions included intrathecal transplantation of autologous bone marrow mononuclear cells and neuro-rehabilitation. Improvement was observed in eye contact, attention and concentration, hyperactivity, sitting tolerance, social interaction, stereotype and aggressive behavior, speech, command following and self-stimulatory behavior. A significantly better outcome of the intervention was found in patients at younger age and with shorter duration of disease.

Geetha, B., Sukumar, C., Dhivyadeepa, E. *et al.* (2018) studied to investigate the association of socioeconomic, environmental, pregnancy and newborn-related risk factors among children with autism spectrum disorders. It was a population -based case-control study. Study included 55 children with autism spectrum disorder. Results showed significance of the factors like: paternal age greater than 40 years, family history of autism, nutrition during intra-natal period, mode of labor, fetal hypoxia, neonatal intensive care unit (NICU) stay and history of breast feeding.

Geeta Shroff (2017), found in a study found that although autism spectrum disorder is an incurable disease, but it can be managed by educational and medical interventions. Human embryonic stem cell therapy have shown to improve blood perfusion in the brain; thus, this therapy may be effective in improving the motor and social skills, and cognition in patients with ASD.

## 3. MATERIALS AND METHOD:

**Research design:** Pre-experimental pretest-posttest design was used for this study.

**Setting:** This study was conducted in the pediatric unit of SMI Hospital, Dehradun.

**Sample:** Sample comprises of 60 staff nurses working in pediatric unit.

**Sampling technique:** In this study, a non-probability convenient sampling technique was used for sampling the staff nurses of pediatric unit.

**Data collection procedure:** Structured questionnaire method was used.

**Data analysis:**

**Section A**

Frequency and percentagewise distribution of demographic variables.

**Section B**

Frequency and percentagewise distribution of pre-test and post-test score.

**Section C**

Comparison of pre-test and post-test score.

Effectiveness of interventions in term of increasing the knowledge level.

**Section D**

Association of demographic variables of students with pre-test and post-test knowledge score.

## 4. FINDINGS:

Based, on the objectives of the study, structured teaching program was used to find out the effectiveness on the knowledge of the staff nurses regarding stem cell therapy, for autistic children.

**Table 1: 't' value between the pre-test and post-test score value.**

**N=60**

Knowledge score value	Mean	SD	df	Calculated 't' value	Tabulated 't' value	Level of significance
Pre test	19.98	4.58	59	24.5	2.000	Highly significant
Post test	35.48	5.13				

The calculated 't' value (24.5) is more than the table value (2.000) at  $p < 0.05$  level of significance. Therefore, it can be said that the structured teaching program was effective in increasing knowledge level among staff nurses.

## 5. RECOMMENDATIONS:

- A similar study can be done on a larger population in community setting.
- A future study can be conducted in staff nurses using control and experimental group.



- Special knowledge should be given to the staff nurses and community people for the storage and utilization of stem cells for different childhood disorders.
- Utilization and storage of stem cells should be implemented in the curriculum of the nurses.
- Government should take actual steps to sponsor/fund more similar studies to improve the knowledge level of the health care professionals.

## 6. CONCLUSION:

The structured teaching program about the utilization of stem cell therapy for autistic children was found to be quite effective on the knowledge of the staff nurse.

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