

# A STUDY TO ASSESS THE EFFECTIVENESS OF COMPUTER ASSISTED INSTRUCTION ON KNOWLEDGE OF STEM CELL THERAPY AMONG HOSPITAL STAFF AT SELECTED HOSPITAL, LUCKNOW.

Mr. Ajay Kumar Singh, Research Scholar, Shri Venkateshwara University  
Dr. Virendra Singh Choudhary, Principal Cum Guide, JNU, SV University.

**ABSTRACT** Stem cell therapy is also called as regenerative medicine, it helps to repair dysfunction, diseases and injured tissue by using stem cell. The present study **Objectives** are to test the effectiveness of CAI of knowledge among hospital staff regarding stem cell therapy and to associate pretest level of knowledge regarding stem cell therapy with certain demographic variables such as age, sex, experience. **Research Design and Method** Fifty hospital staff were selected using simple random sampling technique in SGPGI hospital. The data were collected using structured interview schedule. Pretest was done using structured interview schedule to assess the hospital staff knowledge about stem cell therapy. Computer Assisted Instruction was given about stem cell therapy. After 10 days posttest was conducted using same structured interview schedule. **Result:** The knowledge on stem cell therapy among hospital staff was significantly increased ( $p < 0.001$ ) after CAI. There was a significant association between pretest knowledge on stem cell therapy among hospital staff with demographic variables such as gender, type of occupation and education status, ( $p < 0.001$ ) whereas age and experience are not associated their knowledge. **Conclusion:** The study results showed that Computer Assisted Instruction had improved the knowledge on stem cell therapy among hospital staff. Such teaching programme can be carried out in the hospital to improve the knowledge of hospital staff and thereby to implement effective treatment for curing some disease conditions.

**Key words:** stem cell therapy, computer assisted instruction.

## INTRODUCTION

Stem cell therapy is the new technology used to collect stem cell from bone marrow, peripheral blood and umbilical cord of newborn and introduced into human body for treating various disorders. The newborn disorders like broncho-pulmonary dysplasia, intra ventricular hemorrhage, hypoxic ischemic encephalopathy can treat by stem cell therapy. For infant lymphoblastic leukemia, cerebral palsy, metabolic disorders like krabbe disorder, sanfillipoo syndrome can be treat with stem cell therapy. Childhood disorders like blood disorders, metabolic disorders, immune disorders, cancer (leukemia, lymphoma, myeloma), myelodysplastic syndrome cure by stem cell therapy. Neurological disorders like Parkinson's disease, Alzheimer's disease, spinal cord injury, stroke, cerebral palsy, batters disease, amyotrophic, lateral sclerosis are treated by stem cell therapy. Heart diseases, burns, diabetes also treat by stem cell therapy. Stem cell therapy used for anti-aging therapy. Nowadays, it shows great promise for regenerative medicine.

## NEED FOR THE STUDY

For millions of people around the world who suffer from incurable diseases and injury in worldwide. So, California Institute of Regenerative Medicine October 11, 2017 announced at stem cell awareness day every year Second Wednesday of October we celebrate, on that day is an opportunity to make aware about

scientific advance made to date and help draw the attention to the effect of stem cells. The aim of present study was to assess the effectiveness of computer assisted instruction on knowledge of stem cell therapy among hospital staff at selected hospital, lucknow.

## STATEMENT OF THE PROBLEM

A Study To Assess The Effectiveness of Computer Assisted Instruction On Knowledge Of Stem cell therapy Among Hospital Staff in SGPGI, Lucknow.

## OBJECTIVES

1. To test the effectiveness of Computer Assisted Instruction on knowledge of stem cell therapy among hospital staff.
2. To associate the pretest level of knowledge among hospital staff regarding stem cell therapy with certain demographic variables.

**HYPOTHESIS;** The mean posttest knowledge score on stem cell therapy will be a significantly higher than the mean pretest knowledge of hospital staff after Computer Assisted Instruction

## MATERIAL AND METHODS

**RESEARCH DESIGN** One group-pretest, posttest design was employed for this study.

### VARIABLES:

**Independent variable** The Computer Assisted Instruction

**Dependent variable:** The knowledge about stem cell therapy among hospital staff working at SGPGI.

### Extraneous variables:

- Individual difference in the subjects
- Exposure to other training program.

**SETTING OF THE STUDY:** This study was conducted in SGPGI hospital, Lucknow.

**POPULATION** Both male and female staff in SGPGI hospital.

**SAMPLING TECHNIQUE** Simple random sampling technique was adopted to select the subjects for the study.

### Ethical Consideration

Hospital staff was explained about the purpose of the study and written informed consent was obtained from each hospital staff. The study was conducted after approval was obtained from institutional human ethics committee. No hospital staffs were denied from their routine work and participants were told that they were under no obligation to participate in the study.

## CRITERIA FOR SAMPLE SELECTION

### Inclusion Criteria:

- Male and female hospital staff working at SGPGI Hospital.
- Hospital staff with more than one-year experience

### Exclusion Criteria

- Hospital staff who are not willing to participate.
- Hospital staff who are not able to understand Hindi.

## Development of Data Collection Instrument

The research tool was developed by doing extensive literature review. Five experts from nursing provided their opinion and their valuable suggestions were incorporated to develop the research tool.

**Content Validity:** Content validity was obtained from 7 experts. Suggestions were incorporated and the tool and intervention was finalized based on the suggestion.

## DESCRIPTION OF THE DATA COLLECTION INSTRUMENT

The tool used for data collection was structured interview schedule. It was organized in 3 sections.

**Section A Demographic data** such as age, gender, educational status, nature of employment, work experience, marital Status.

**Section B Knowledge on stem cell therapy.** It consisted of 30 closed ended questions (multiple choice). Correct answer was scored as "one" and wrong answer was scored as "Zero".

**SCORE INTERPRETATION** The knowledge aspect consisted of 30 questions. Correct answer was given a score of 1 and wrong answer was given a score of 0. The total score of 30 on knowledge was converted to 100%. The total knowledge score was interpreted as below

<50%	-Inadequate knowledge
51 %-75 %	- Moderately adequate knowledge
>75%	- Adequate knowledge

**SAMPLE SIZE** 50 hospital staff who met inclusion criteria were selected.

**RELIABILITY:** Using test and retest method reliability was checked. The tool was reliable. Score  $r = 0.72$

## DATA COLLECTION PROCEDURE

The data collection was for about four weeks. Hospital staff working at SGPGI Hospital, were selected based on the inclusion criteria. The pretest was conducted after obtaining consent from the hospital staff. Pretest questionnaire was administered to the participants.

On the same day after the pretest the hospital staff were gathered and seated comfortably at the lecture hall and given Computer Assisted Instruction on knowledge about stem cell therapy. After 10 days of Computer Assisted Instruction, posttest was conducted using the same questionnaire

**DESCRIPTION OF THE INTERVENTION** The Computer Assisted Instruction focused on stem cell therapy, types, collection, storage, disease condition.

## PLAN FOR DATA ANALYSIS

After the scoring, the pretest, posttest results were tabulated. The statistical methods applied for analysis were

- Number, percentage, mean and standard deviation.
- Test the effectiveness of CAI, one-way ANOVA repeated measure was used.
- Compare the pretest with posttest, 't' test was used.

## FINDINGS AND DISCUSSION

**First objective** of the study was to test the effectiveness of Computer Assisted of knowledge among hospital staff regarding stem cell therapy. In this study result revealed that the knowledge on stem cell therapy among hospital staff was significant increased ( $p < 0.001$ ) after Computer Assisted Instruction.

**Second Objective** There was a significant association between pretest knowledge on stem cell therapy among hospital staff with demographic variables such as gender, type of occupation and education status, ( $p < 0.001$ ). Hence the research hypothesis is accepted that the mean posttest knowledge score on stem cell therapy will be a significantly higher than the mean pretest knowledge of hospital staff after CAI.

## MAJOR FINDINGS OF THE STUDY

1. The knowledge on stem cell therapy among hospital staff was significantly increased ( $p < 0.001$ ) after CAI.
2. There was a significant association between pretest knowledge on stem cell therapy among hospital staff with demographic variables such as gender, type of occupation and education status, ( $p < 0.001$ ).

### Role of Nurse in Stem Cell Therapy

Educator: Nurse teaches the society regarding the importance of stem cell therapy.

Care giver: nurse provide care from the time of collection of stem cell to transplantation of stem cell.

Coordinator: Nurse act as the coordinator between the patient and health care team.

Researcher: Nurses publishes many research articles regarding stem cell transplantation.

## CONCLUSION:

The present study assessed the effectiveness of CAI on knowledge of stem cell therapy among hospital staff. This implies that CAI had improved the knowledge on stem cell therapy among hospital staff. Such teaching programme can be conducted on the government and private hospitals to improve the knowledge of hospitals staff and there by it helps to improve awareness and leads to healthy wellbeing.

## REFERENCES

1. Tewatie, R. et.al, Stem cell based therapies for spinal cord injury, Journal of hemato therapy and stem cell research, 2009; 12(3): 15-114.
2. Shroff, G. Human Embryonic Stem cells in the treatment of Autism: A case series, innovations in clinical neuroscience, 2017, 14(3-4): 12-16.
4. Vladislav, et.al., Stem cells as new agents for the treatment of infertility: current and future perspectives and challenges, biomedical research international, 2014.
5. Sekaran, et.al., The current perceptive of stem cell therapy in orthopaedic surgery, Archives of trauma and research, 2016, 5(4).
6. Hassar, A. Hassar, G. Rasool, Z. Role of stem cells in treatment of neurological disorder, International journal of health science, 2009,8(2): 227-233.
7. Chang, Y. Hhn, S. Sung, S. & Park, W. Stem cell therapy for neonatal disorder, Prospect and challenges, Yonsei medical journal, 2017, 58(2): 266-271.
8. Bongso, A. Lee, E. Stem cell their definition and sources embryonic, department of Obstetrics, National university.
9. <http://www.regmednet.com>
10. <http://www.cirm.ca.gov>
11. Harvard university science in news, January 2, 2014. [sitn.hms.harward.edu](http://sitn.hms.harward.edu).
12. Yenny Rojas, History of stem cell treatment national stem cell center, december 29, 2017. <http://www.nationalstemcellcenters.com>
13. Shihadeh Hanna, History and recent advances of stem cell biology and the implication for human health, Senior honor project. 421. <http://digital.common.uni.edu>