

Effectiveness of Activity Therapy on Stress and Cognitive Status among Senior Citizens Residing in Selected Old Age Homes at Dindigul

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Abstract: *The traditional Indian family system has been changed to nuclear family, the role of providing safety and security for senior citizens have been shared by the institution such as old age home. The study findings of the mean post-test level of stress in experimental group 48.07 (SD±9.85) was significantly lower than the mean post-test level of stress in control group 104.33 (SD±15.56) and mean difference is 56.26. The calculated independent 't' value was 17.99 which was significant at p<0.05 level of significance among senior citizens. The mean post test score of cognitive status in experimental group 23.53 (SD± 3.38) was significantly higher than the mean post test score of cognitive status in control group 18.43(SD± 2.58) and mean difference is 5.1. The calculated independent 't' value was 7.06 which was significant at p<0.05 level of significance the mean post test score of cognitive status in experimental group 23.53 (SD± 3.38) was significantly higher than the mean post test score of cognitive status in control group 18.43 (SD± 2.58) and mean difference is 5.1. The calculated independent 't' value was 7.06 which was significant at p<0.05 level of significance among senior citizens. The Study result revealed that Activity therapy was effective in reducing the level of stress and improving cognitive status among senior Citizens residing in selected old age homes.*

Keywords: Activity therapy, Stress, Cognitive status, Senior citizens, Old age home

1. Introduction

The traditional Indian family system has been changed to nuclear family, the role of providing safety and security for senior citizens have been shared by the institution such as old age home. The absence of family care and surroundings gives rise to stress and loneliness, meantime a high proportion of senior citizens often experience limitation in daily life due to impairments in memory and cognitive functions, for relieving stress and improve cognitive status, activity therapy helps the senior citizens to engage in meaningful activity that generate positive feelings, which can help to reduce stress and prevent cognitive impairment. **Nabin Gosh., (2019)**

Need for the Study

- Globally, there were 727 million persons aged 65 years or over in 2020 **UN Report, World population Ageing, (2020)**
- In Tamil Nadu, the proportion of elderly shows significant difference than India, which series from 5.6% to 11.2% at census 2011, and still expected to grow up to 17.1 by 2026. **Kathirvel .D, (2017)**
- In Dindigul district the 60 Plus senior citizens populations was 175030, 9% the total in district population, according to 2011 census of district. **District Statistical Hand Book., (2018-19)**
- The elderly face stress from various situations, which are different from those that are faced by adults. The process of ageing wears of the brain in some way and the response to stressful situations is far from adequate at times. **Woolston.C., (2010)**
- In India 1 in 10 people aged 45 and older are experiencing subjective cognitive decline.84% of people experiencing

subjective cognitive decline. **Behavioral Risk Factor Surveillance System, (2015-2018)**

Activity therapy is a healing technique that is often employed with people overcoming physical addiction or emotional issues. The main focus of the therapy is to engage the individual in creative endeavors that help to alter the thought process.

2. Review of Literature

Part – I

Over view of

- Ageing process.
- Stress
- cognitive status
- Activity therapy.

Part - II

Section A : Studies related to incidence and prevalence of stress and cognitive status among senior citizens.

Section B : Studies related to stress among senior citizens.

Section C : Studies related to cognitive status.

Section D : Studies related to effectiveness of activity therapy.

Section E : Studies related to nurses role in activity therapy among senior citizens.

Part- I

Over view of

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The Aging Process

Our age-obsessed culture is consumed with "slowing down aging", but the basic truth of it all is that growing old is unavoidable

Causes of stress in older people can be related to

- Caring for a sick spouse.
- Losing a spouse.
- Death of other relatives and friends that one may have been close to.
- Reducing physical strength and a realization that one is not as fit and strong as one used to be.
- Worries about finances after retirement.
- No one to talk to and a feeling of dejection at being dependent on someone

Vishal.I., (2008)

Cognitive status

Cognitive skills and knowledge involve the ability to acquire factual information, often the kind of knowledge that can easily be tested. So, cognition should be distinguished from social, emotional, and creative development and ability. Cognitive science is a growing field of study that deals with human perception, thinking, and learning.

Merriam Webster., (2021)

Activity Therapy

Activity therapy is a healing technique that is often employed with people overcoming physical addictions or emotional issues. The main focus of the therapy is to engage the individual in creative endeavors that help to alter the thought processes of the patient in a positive manner. This therapy may take place between a therapist and a single patient or be utilized in a group environment.



Malcolm Tatum, (2019)

Activity therapy boosts cognitive abilities like physical exercise, social engagement, and games that stimulate your brain (such as bridge, chess, and memory challenges) all improve the healthy functioning of mind.

Part- II**Section A: Studies Related to Incidence and Prevalence of Stress and Cognitive Status among Senior Citizens.**

Ryan G Wagner., (2020) conducted study on Incidence of Cognitive Impairment during Aging in Rural South Africa. Data were from in-person interviews with 3,856 adults aged ≥ 40 who were free from cognitive impairment at baseline in the population-representative cohort, Incidence rates and rate ratios for cognitive impairment were estimated according to key demographic, social, and health-related factors, adjusted for age, sex/gender, and country of birth. The incidence of cognitive impairment was 25.7/1,000 person-years (PY) 95%

confidence interval [CI]: 23.0-28.8), weighted for mortality (12%) and attrition (6%) over the 3.5-year mean follow-up (range: 1.5-4.8 years). Incidence increased with age, from 8.9/1,000 PY (95% CI: 5.2-16.8) among those aged 40-44 to 93.5/1,000 PY (95% CI: 75.9-116.3) among those aged 80+, and age-specific risks were similar by sex/gender.

Section B: studies related to stress among senior citizens.

Bince Varghese., (2020) conducted a descriptive Study to Assess the Level of Stress among Elderly People Residing at Old Age Homes, Uttar Pradesh India. A quantitative research approach with non-experimental survey design was used. Non-probability purposive sampling technique was employed to select 30 elders. A standardized Perceived Stress Scale containing 10 items were used for assessing the level of stress among the subjects. Data was analyzed using SPSS version 25. The majority of 46.7% elders who reside at old age homes had moderate stress followed by 30% high level of stress and 23.3% low stress. There was an association found between the levels of stress among the elder people with their pattern of communication with the family members ($\chi^2 = 14.7$, $p = 0.001$).

Section C: Studies Related to Cognitive Status among Senior Citizen.

Julia L. Newton., (2018) Cognitive Functioning in Older People at UK Results of the First Wave of Cognition of Older People, Education, Recreational Activities, Nutrition, Comorbidities, and Functional Capacity Studies stated that each year of age there is a decrease in MMSE score by 0.18 points. Varicose veins on lower extremities and low OS were also significantly associated with MMSE result. For every year of having hypertension, low OS and not being abroad in the last 3 years, there was 0.17, 0.30, and 0.16 less points, respectively, and 0.15 more point per one additional meter walked in 6MWT in the MoCA score. With each year of age and for low OS there were 0.31 and 0.21 s more to complete TMT B, respectively. Education, OS, presence of systemic diseases and social and tourist activities, aerobic capacity and body composition could be considered as factors contributing to cognitive functioning in older people. However, the relationship of above-mentioned factors with education level and cognitive function may be not fully orthogonal.

Section D: Studies Related to Effectiveness of Activity Therapy.

Neha, Aarushi Scott .et. al., (2020) A Study to Assess the Effectiveness of Music Therapy on Level of Stress among Elderly People in Selected Old Age Home at Meerut. Evaluative study was conducted using quasi-experimental (non randomized control group design) conceptual framework utilized for study was General system theory. Total 40 samples (20 experimental group+ 20 control group) were selected. Non probability convenient sampling was used. The demographic data were collected 15 minutes prior to pre test.

Pre test was taken by using Sheldon Cohen Perceived stress scale Next is subjects was instructed to listen to 20 min interrupted recording Classical Period instrumental Music played via CD Player in experimental group. Finally post test was taken by measuring stress level of elderly people after 7 days of Music therapy. The mean pre test score on level of stress among experimental group was 30.97 & control group was 29.45 respectively. The mean post test score on level of stress among experimental group was 23.43 respectively & the mean post test score on level of stress among control group was 28.66 respectively. This shows that when comparing the experimental and control group the stress level has been reduced in experimental group not in control group. So music therapy is highly effective in reducing stress among elderly people.

Section E: Studies Related to Nurses Role in Activity Therapy.

Vinika raj., (2015) conducted a study to assess the effectiveness of Activity therapy on stress among old age people in selected old age Homes at Kanyakumari District. Quantitative research approach was used. Data collection was done by Modified Psychological Stress Assessment Scale. Activity therapy was administered for old age people. The data gathered were analyzed by descriptive and inferential statistical method and interpretation was done on the basis of the objectives of the study. The data was collected and analyzed by using descriptive and inferential statistics. The findings were highly significant to the table value. During pre test, In Modified Psychological Stress Assessment scale, the analysis of pretest out of 60 samples, 48.3% of them had moderate stress, 51.6% of them had severe stress. So it indicates that moderate and severe level of stress was common among old age people and they require some relieving measure. During post test, out of 60 samples 76.3% of them had mild stress and 23.3% of them had moderate stress. Based on Modified Psychological Stress Assessment the post test result shows that the mean post test score was 26.51%, standard deviation was 7.35% and the mean difference was 34.9. The obtained paired t test value 27.09 which is more than the table value 0.05 level of significance. From the results of the study it is concluded that rendering activity therapy to the old age people was effective in reducing stress.

Statement of the Problem

A study to assess the effectiveness of activity therapy on stress and cognitive status among senior citizens residing in selected old age homes at Dindigul.

Objectives

- 1) To assess the pre test level of stress and cognitive status among senior citizens in experimental and control group.
- 2) To assess the post test level of stress and cognitive status among senior citizens in experimental and control group.

- 3) To compare the pre test and post test level of stress and cognitive status among senior citizens in experimental group.
- 4) To evaluate the effectiveness of activity therapy on level of stress and cognitive status among senior citizens between the experimental and control group
- 5) To find the correlation between the level of stress and cognitive status among senior citizens in experimental group.
- 6) To find the association between the post test level of stress among senior citizens and their selected demographic variables in experimental group.
- 7) To find the association between the cognitive status among senior citizens and their selected demographic variables in experimental group.

Research Hypotheses

H₁: The mean post test level of stress score is significantly lower than the mean pre test level of stress score among senior citizens in experimental group.

H₂: The mean post test score of cognitive status is significantly higher than the mean pre test cognitive status score among senior citizens in experimental group.

H₃: The mean post test level of stress score among senior citizens in experimental group is significantly lower than the mean post test level of stress score among senior citizens in control group.

H₄: The mean post test score of cognitive status among senior citizens in experimental group is significantly higher than the mean post test score of cognitive status among senior citizens in control group.

H₅: There is significant correlation between stress and cognitive status among senior citizens in experimental group.

H₆: There will be a significant association between the post test level of stress score among senior citizens and their selected demographic variables in experimental group.

H₇: There will be a significant association between the post test score of cognitive status among senior citizens and their selected demographic variables in experimental group.

Operational Definition

Effectiveness

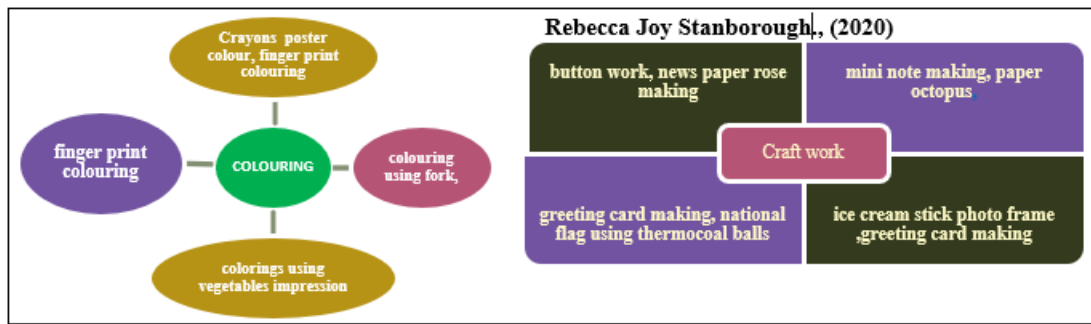
Effectiveness refers to the production of a desired or intended result.

Kindersley D., (2010)

In this study, it refers to determine the extent to which Activity therapy intervention has brought about significant difference in reducing the level of stress and improving the cognitive status in pre test and post test scores among senior citizens by using statistical measurements.

Activity Therapy

Activity therapy uses leisure activities to help people with specific health conditions improve the skills, abilities, overall health and emotional wellbeing.



Stress

“Stress is a prolonged unpleasant emotional state or psychological and physiological response to events that upset personal balance”.

Prabhudeva S.S., (2012)

In this study it refers to the disturbances in physical, emotional, behavioral and psychological well being which was measured by using adopted Kenyon’s (2005) stress assessment scale and its scores.

Cognitive Status

Cognitive status comprises multiple cognitive domains such as memory, language, vasoconstriction, perception, attention and executive functions.**Lezak.et.al., (2014)** In this study it refers to the intellectual process which includes orientation, registration, attention, calculation, recall and language which was measured by using the Hartford Institute of Geriatric Nursing (1975) mini mental status examination and its scores.

Senior Citizens

It refers to person whose age was 60 years and above. **Shobha Gusain., (2012)**. In this study it refers to the persons who are in the age between 61 to 75 years.

Old Age Home: An old age home is a place where old people live and are cared for when they are too old to look after themselves. **Collins., (2021)**

In this study the old age homes refers to Anbalaya Rest Home for Aged and Shelter Home for Urban Homeless.

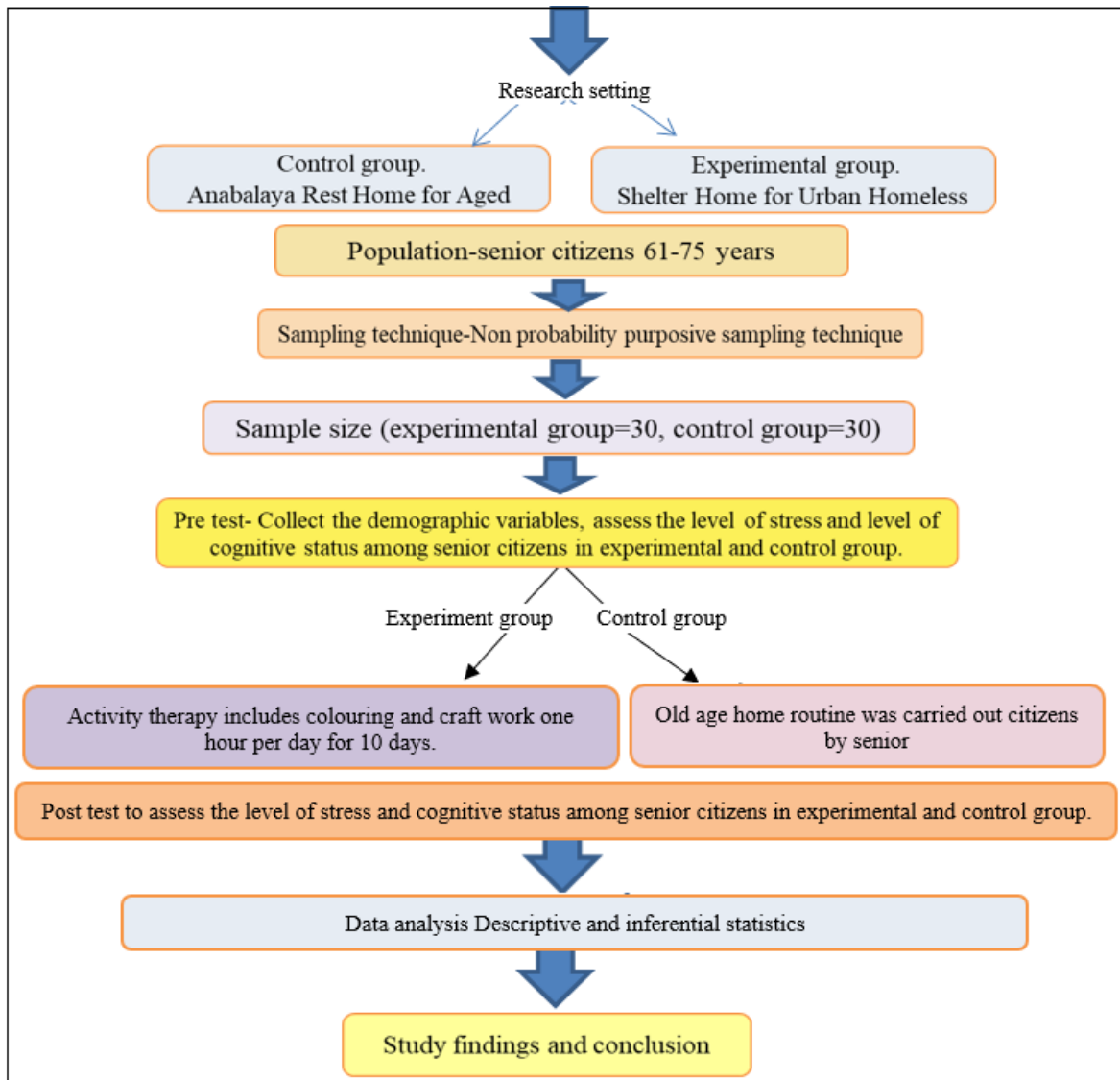
Projected Outcome

In this study, activity therapy helps to reduce stress and eliminates the activity limitations and restrictions. Practicing selected activity therapy regularly reduces stress, improves psychological well being and improves cognitive status among senior citizens. This activity therapy brings relaxation, diversion and concentration which help the senior citizens to feel happy and stress free. This turn towards to lead a blissful life.

3. Methodology

Schematic Representation

An evaluative approach Research design - Quasi experimental non equivalent control group pre test and post test design



Instrument and Scoring Procedure

The tool consists of 3 parts.

Part I

Its consist of demographic variable like age in years, sex, religion, educational status, previous employment, duration of residing in old age home, number of children, reason for residing in old age home, financial supportive system, medical illness and self interested recreational activities.

Part II

Stress assessment rating scale was adopted from Kenyon’s (2005) to assess the level of stress which consists of 40 items. Every question was rated as very often, often, sometimes, rarely and never. It consists of three components such as physiological, psychological and cognitive symptoms of stress. Total score was 160.All items are positive questions.

Part III

The Hartford Institute for Geriatric Nursing (1975) Mini Mental Status Examination Consists of 30 Items. It was used

to assess the level of cognitive status among senior citizen. The total score was 30, which are scored as orientation -10, registration-5, attention and calculation -5, recall-3 and language-7 respectively.

Scoring Procedure and Interpretation

Part II

Stress assessment rating scale was used to measure the level of stress among senior citizens. Stress scores are interpreted as follows.

Rating	Scoring
Very often	4
Often	3
Sometimes	2
Rarely	1
Never	0

The total score was interpreted as follows:

Level of stress	Score	Percentage
No Stress	0	0%
Low stress	1-53	1-33%
Moderate stress	54-107	34- 67%
High stress	108-160	68-100%

Part III

Mini mental status examination was used to assess the cognitive status among the senior citizens. The total score was interpreted as follows.

Level of cognitive status	Scores	Percentage
Severe cognitive impairment	0-10	0-33%
Moderate cognitive impairment	11-20	34-67%
Mild cognitive impairment	21-29	68-97%
No cognitive impairment	30	98-100%

Data Collection Procedure

Data collection was done in Anbalaya rest home for aged and Shelter home for urban homeless. The investigator obtained written permission from the management and participants prior to the study. The purpose of the study was explained to the subjects. The samples who fulfilled the inclusion criteria were selected by using purposive sampling technique. 30 samples were selected from shelter home for urban homeless for experimental group and followed by 30 samples from Anbalaya rest home for aged for control group. In control group data were collected from 30 senior citizens per day 10 members. Demographic variables and pre test was conducted on the first day by using stress assessment rating scale by structured interview method which was adopted from Kenyon's (2005) followed by pretest cognitive status was assessed by Mini mental status examination which was adopted from Hartford Institute for Geriatric Nursing (1975). Old age home routine was carried out by senior citizens. The post test was done to control group on the 11th day.

In experimental group data were collected from 30 senior citizens per day 10 members. Demographic variables and pre test was conducted on the first day by using stress assessment rating scale which was adopted from Kenyon's (2005) followed by pre test cognitive status was assessed by Mini mental status examination which was adopted from Hartford Institute for Geriatric Nursing (1975) by structured interview method. The activity therapy was given in the form of two sessions, session 1- colouring for 30 minutes and session 2- craft work for 30 minutes, colouring and craft work was demonstrated and assisting for 30 samples dividing in 3 groups. Each group consists of 10 members. Colouring and craft work for the senior citizens like crayons, poster colour, finger print colouring, colouring using fork, colouring using vegetables impression, colouring using colour paper, colouring using leaf, and collage paper coloring, activities of craft work like button work, news paper rose making mini note making, paper octopus, ice cream stick photo frame, greeting card making, national flag using thermocoal balls for 10 consecutive days. Senior citizens were observed by the investigator in every session. On 11th day the post test was

done to assess the stress by using stress assessment rating scale and cognitive status by Mini mental status examination. The same procedure was followed for all the samples in experimental group. The collected data were analyzed by using descriptive and inferential statistics.

4. Major Findings of the Study

- With regard to the level of stress and the mean post test level of stress score (± 48.07) was lower than the pre test mean score (± 106.96). The calculated paired 't' value was 44.19 which was significant at $p < 0.05$ level, which showed that Activity therapy intervention was effective in lowering the stress.
- In relation with cognitive status and the post test mean score (± 23.53) was greater than the pretest mean score (± 16.03). The calculated paired 't' value was 17.92 which was significant at $p < 0.05$ level, which showed that activity therapy intervention was effective in improving cognitive status.
- The mean post test level of stress score in experimental group 48.07 ($SD \pm 9.85$) was significantly lower than the mean post test level of stress in control group 104.33 ($SD \pm 15.56$) and mean difference is 56.26. The calculated independent 't' value was 17.99 which was significant at $p < 0.05$ level of significance. This showed that there is a significant difference in the level of stress between the experimental group and control group.
- The mean post test score of cognitive status in experimental group 23.53 ($SD \pm 3.38$) was significantly higher than the mean post test score of cognitive status in control group 18.43 ($SD \pm 2.58$) and mean difference is 5.1. The calculated independent 't' value was 7.06 which was significant at $p < 0.05$ level of significance. This showed that there is a significant difference in the score of cognitive status between experimental and control group.
- The mean post test stress score in experimental group was 48.07 with ($SD \pm 9.85$) and in the mean cognitive status score was 23.53 with ($SD \pm 3.38$). The Karl Pearson's coefficient of correlation. The value of $r = -0.270$. That was slightly negative correlation.
- The study findings showed that there was no significant association between the level of stress among senior citizens and their selected demographic variable in experimental group.
- The study findings showed that there is no significant association between the post test score of cognitive status among senior citizens and their selected demographic variable except self interested recreational activities ($\chi^2 = 6.49$) in experimental Groups.

5. Conclusion

The study was done to assess the effectiveness of Activity therapy on stress and cognitive status among senior citizens residing in selected old age home at Dindigul. The calculated independent 't' value were 't' = 17.99 for stress and calculated independent 't' value were 't' = 7.06 for cognitive status which was significant at $p < 0.05$ level, Where the result revealed that

Activity therapy was effective in reducing the level of stress and improving cognitive status. Activity therapy was cost effective, non invasive, convenient, easy to approach, reduce stress and highly feasible. Hence the study concluded that Activity therapy can be practice.

6. Nursing Implications

The findings of the study have certain important implication for nursing service, nursing education, nursing administration and nursing research.

Nursing Service

- Activity therapy is an effective measure to reduce the stress and improving cognitive status among senior citizens. Nurses can make this activity therapy as an effective measure to enhance the coping strategies of senior citizens.
- Student nurses can use this intervention to boost the withdrawn patients.
- Performance of activity therapy is a Safe and better modality.
- Research can fruitfully be used by nurses in planning care and providing nursing intervention (Activity therapy) that are especially beneficial for senior citizens with stress and cognitive impairment.

Nursing Education

- Nurse educator can train and encourage the student nurses to utilize activity therapy as an alternative complimentary therapy to reduce stress and improving cognitive status among senior citizens.
- This study can motivate student nurses to explore new strategies for effective reduction of stress and improving cognitive status among senior citizens.
- Student nurses can be trained to assess the level of stress of the patient and their relatives.

Nursing Administration

- The nurse administrator co-ordinates her activity along with the curative aspects of care among senior citizens by participating, practicing, and supervising the activity therapy.
- Nurse administrator can organize education program on selected recreational therapy to the care givers of senior citizens.
- Nurse administrator can recognize activity therapy as a cheap, cost effective method in the executive of reducing stress and improving cognitive status among senior citizens.

Nursing Research

- The study finding can effectively be utilized by the emerging researchers.
- Large scale study can be conducted on activity therapy.
- Teachers can direct and motivate the nursing researchers. So that they can conduct research in the same and different specialties and thereby professional independence can be achieved.

7. Recommendations

- Similar study can be conducted as comparative between senior citizens male client and female client in different settings.
- Similar study can be conducted as comparative study between senior citizens in old age homes and old age residents with their family.
- A study can be conducted with large sample size to generalize the results of the study.
- The study can be carried out for a longer period of time.
- The effectiveness of Activity therapy can be done by adopting a comparative study among relaxation therapy and other therapies.

8. Limitation

It was more time consuming to explain the senior citizens because of difference in their understanding.

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