



Research Article

IMPACT OF LAUGHTER YOGA ON LEVEL OF STRESS AMONG THE ELDERLY IN SELECTED OLD AGE HOME AT UTTAR PRADESH (INDIA)

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ABSTRACT

**Introduction:** The elderly in old age homes are a distinctive population with a lack of family and social support contributing to an increased prevalence of stress. **Aim:** This study aimed to determine the effectiveness of the laughter yoga on the level of stress among elderly people in selected old age homes. **Materials & methods:** A quantitative research approach with Pre-experimental one group pretest and posttest design was used to conduct the study in selected Old age homes of Uttar Pradesh. Non-probability purposive sampling technique was employed to select 42 elders. A standardized Perceived Stress Scale containing 10 items were used for assessing the level of stress among the subjects. Data were analyzed using SPSS version 25. **Results:** The mean score of the elderly in pretest 25.62±3.60 is larger than the mean score in posttest 12.19±3.05 and the obtained t-value is 17.82 which is significant P = 0.001. There was an association found between the levels of stress among the elder people with their type of family. **Conclusion:** The study is concluded that laughter yoga intervention is effective in reducing the stress among elderly. A mixed-method approach can be used to explore comprehensive findings in future studies.

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INTRODUCTION

Ageing is a progressive process of life that leads to various changes in the biological, psychological and social structure of an individual.<sup>[1]</sup> Biologically ageing is that the results of the buildup of a wide variety of molecular and cellular damage. This will lead to a gradual decrease in physical and mental capacity which tends to be a growing risk of disease conditions and finally death. But these changes are not similar to every individual who are older, some 70 year-olds enjoy extremely good health and functioning while other 70 year-olds are fragile and require significant help from others.<sup>[2]</sup>

Globally older people population was 382 million in 1980 which is increased more than twice as large as 962 million in 2017 and it is projected to reach nearly 2.1 billion by 2050.<sup>[3]</sup> In India, the elderly population (aged 60 years or above) was nearly about 104 million in 2011 according to the Population Census. It is expected to grow to 173 million by 2026, suggests by the United Nations Population Fund and Help Age India.<sup>[4]</sup>

Elderly people are vulnerable to disease and disability, but they are physically different about the mental health of those whom they accept.

Some psychological problems within this period of life are more prevalent.<sup>[5]</sup> Some of the common physical and psychological problems are dependency, ill health, absence of social security, loss of social role and recognition and non-availability of opportunities for creative use of leisure.<sup>[6]</sup>

Stress is a common problem among these. Stress and new diseases of civilization today is the rise of many physical and mental diseases.<sup>[7]</sup> It is widely used in everyday life. Prolonged stress and ineffectual coping block with the meeting of basic needs and can disturb physical and mental health. One cannot reject it as a stressor for old age. The age and stress is very close to each other. People who take more stress are accountable to feel more tired and sick than people who have a stress-free life.<sup>[8]</sup>

India is a developing country, industrialization and urbanization resulting change in the social structure of the country. Generation gap and technology also play a vital role in the change in relationships. This leads to the loosening of family relationships day by day. So the elderly are neglected, feel like a burden on the family, useless, narrow-minded in the families. Nowadays there is no space for the elders in the family because of the development of the nuclear family, urbanization, the influence of western culture and changes of lifestyle; they are shifted to old age home for the family's convenience. This loss of support or split-up from their

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families makes them more physically and emotionally mistreated that cause psychological difficult like aloneness, feeling of insecurity, anxiety, depression, social isolation etc.<sup>[9]</sup> Laughter delivers enhances blood supply and good exercise to organs. It releases endorphins, natural opiates that stimulate feelings of caring and forgiveness. It increases the levels of immunoglobulin A that is the first-line defences against viral infections and also fight with the cancer cells. It provides an excellent cardio and mind-body workout. Laughter yoga is based on the belief that voluntary laughter brings parallel physiological and psychological welfares as spontaneous laughter. So it is done by laughing voluntarily for a prolonged period of time. This may lead to the elevation of mood and playfulness. Some studies suggest that laughter lowers stress hormone levels and may improve tolerance of pain.<sup>[10]</sup>

Yadav K *et al* (2016) conducted a study which concluded that the elderly people who live in old age home suffer from stress and depression than elderly who reside in their home with their family and social support.<sup>[11]</sup> Aged persons living in old age home have a feeling of hopelessness, worthlessness and helplessness. Now a day's most of the elderly people are isolated from families. Hence the researchers felt to conduct an experimental study on stress among elderly people residing at old age homes. Objectives of this study were to determine the effectiveness of the laughter yoga on the level of stress among elderly people in selected old age homes in Uttar Pradesh, India and to find the association of various factors with the level of stress.

**MATERIALS AND METHODS**

A quantitative research approach with Pre – Experimental one group pretest and posttest design was used to conduct the study in selected Old age homes of Uttar Pradesh. The study setting was in Matra Pitra Sadan Vridha Ashram Bhuhera from Uttar Pradesh. Non-probability purposive sampling technique was adapted to select 42 elderly of selected areas of Uttar Pradesh. A standardized Perceived Stress Scale (PSS) was used to assess the stress among elderly people. Ethical and Administrative permission was taken from authorizes in concerned areas. The consent form was prepared for the study participant regarding their willingness to participate in the research study. Inclusion criteria: Elderly people aged 60-75 years, available during the study period, willing to participate and able to answer. Exclusion criteria: Persons with chronic physical & mental disability.

*The research tool for data collection consists of two sections:*

**Section 1:- Demographic tool**

It consists of age, gender, education, occupation, income, marital status, type of the family, the pattern of communication with the family members and practice of any relaxation therapy are the demographic variables. Content validity of the tool was determined by experts in the field of psychology, nursing, and psychiatry respectively

**Section 2:- Perceived stress scale**

The Perceived Stress Scale (PSS) is a standard stress assessment instrument developed by Cohen, in 1983. It consists of 10 items for weighing the level of stress among elderly. Each item is rated on a 5-point scale ranging from 0 to 4 with a higher score signifying a higher level of stress. In these items 4, 5, 7, and 8 are in a reverse manner, their scoring

pattern is in descending order like 4,3,2,1, 0 and the remaining items, the scoring pattern is like 0, 1, 2, 3, and 4. The total maximum score is 40 and the minimum score is 0. The score was graded as 0-13 is a low stress, 14-26 moderate stress and 27-40 high perceived stress. The tool was prepared in English and Hindi for better understanding. Interventional module, Laughter Yoga is a exact example of non-humorous laughter-inducing therapy which is encouraged to be done in groups, involving laughter exercises, clapping, dancing, vocalizing laughter-like sounds like “hoho-hahaha”, and yoga exercises like breathing and relaxation exercises. Table 1 shows the interventional module and its schedules

This scale is in public domain to use. SPSS 25 (Statistical Package for the Social Sciences, India) was used for Statistical analysis and P = 0.05 was considered as the level of significance.

**Table 1** Intervention modules

Session	Topic discussed	Duration
Day 1	Pre test	2 hour
	Defining and benefits of laughter yoga	
Day 2	Warm up	1 hour
	Clamping and chanting	
	Deep breathing	
	Childlike play fullness	
	Warm up with laughter exercises	
Day 3	Greeting laughter	1 hour
	Milk shake laughter	
	Mobile laughter	
	Driving laughter	
	Argument laughter	
	Childlike laughter	
	Smile laughter	
Day 4	Same like day 3	1 hour
Day 5	Same like day 3	1 hour
Day6	Same like day 3	1 hour
Day7	Same like day 3	
Day14	Posttest with same questionnaire	1 hour
	Perceived Stress Scale	

**RESULTS**

**Table 2** Frequency and percentage distribution of demographic variables of subjects (n=42)

Demographic Variable	Frequency (%)
<b>Age (years)</b>	
60-65	14 (33.3%)
66-70	13 (31%)
71-75	15 (35.7%)
<b>Gender</b>	
Male	17 (40.5%)
Female	25 (59.5%)
<b>Education</b>	
Literate	16 (38.1%)
Illiterate	26 (61.9%)
<b>Previous Occupation</b>	
Farmer	32 (76.2%)
Retired	8 (19%)
Unemployed	1 (2.4%)
Other	1 (2.4%)
<b>Family Income (rupees)</b>	
≤ 10000	40 (95.2%)
>10000	2 (4.8%)
<b>Marital status</b>	
Married	27 (64.3%)
Unmarried	2 (4.8%)
Widow	13 (31%)
<b>Type of the family</b>	
Joint family	22 (52.4%)
Nuclear family	20 (47.6%)
<b>Pattern of communication with the family members</b>	
Satisfied	24 (57.1%)
Unsatisfied	18 (42.9%)

The table 2 displays that frequency and percentage distribution of demographic variables, the majority of the elders 35.7% were in the age group of 71 to 75, 59.5% were female, 61.9% were illiterate, 76.2% were farmers, 95.2% were having less than 10000 income, 64.3% were married, 52.4% were in joint family and a majority 57.1% were satisfied with the pattern of communication with the family members.

**Table 3** Frequency and percentage distribution of overall gradation of stress level among elderly

Stress score	Frequency (%)	
	Pretest	Posttest
Low	0 (0%)	28 (66.7%)
Moderate	25 (59.5%)	14 (33.3%)
High	17 (40.5%)	0 (0%)

The table 3 indicates that Frequency and percentage distribution of overall gradation of stress level among elderly, in the pre-test 59.5% elders had moderate stress, 40.5% high stress and 0% low stress among elderly wherein post-test 66.7% had low stress, 14(33.3%) moderate stress and 0% high level of stress

**Table 4** Comparison of Stress score between Pretest and Posttest

Stress Score	N	Mean	sd	t- value	df	P
Pre total	42	25.62	3.60	17.82	41	0.001**
post total	42	12.19	3.05			

\*\*Significant (p<0.01)

The table 4 shows that Comparison of pre-test and post-test stress level score among the elderly by using paired t-test, the overall mean score of the elderly in pretest 25.62±3.60 is greater than the mean score of the elderly in posttest 12.19±3.05 and the obtained t- value is 17.82 which is significant P = 0.001. It is inferred that there is a significant difference in pretest and posttest among elders. So the laughter yoga is effective to reduce stress.

**Table 5** Association between pretest stress level with their demographic variables

Demographic data	≤ Median	> Median	X <sup>2</sup>	df	P
<b>Age (years)</b>					
60-65	6	8	4.39	2	0.11
66-70	7	6			
71-75	12	3			
<b>Gender</b>					
Male	10	7	0.07	1	0.94
Female	15	10			
<b>Education</b>					
Literate	11	5	0.91	1	0.33
Illiterate	14	12			
<b>Occupation</b>					
Farmer	21	11	5.81	3	0.12
Retired	2	6			
Unemployed	1	0			
Other	1	0			
<b>Family Income (rupees)</b>					
≤ 10000	23	17	1.43	1	0.23
> 10000	2	0			
<b>Marital status</b>					
Married	18	9	3.69	2	0.16
Unmarried	0	2			
Widow	7	6			
<b>Type of the family</b>					
Joint	17	5	6.04	1	0.01*
Nuclear	8	12			
<b>Pattern of communication with the family members</b>					
Satisfied	13	11	0.67	1	0.41
Unsatisfied	12	6			

\*\*Significant (p<0.05)

Table 5 illustrates that Chi-square value in pretest stress score with the selected demographic value like the type of the family

(6.041) was significant (p= 0.01) and other variables like age (4.39), gender (0.07), education (0.91), occupation (5.81), income (1.43), marital status (3.69) and Pattern of communication with the family members (0.67) were not significant (p>0.05). Thus it can be concluded that there is an association between stress levels with the type of the family of elder people.

## DISCUSSION

The present study found that laughter yoga is an effective complementary therapy to ease the stress level of elders in old age homes. These results were supported by Dhivagar S *et al* (2016) which displays that in pretest 1.7% of elders have no stress, 51.7% and 46.7% of them had a mild and moderate level of stress respectively. After Laughter therapy 38.3% of elders had no stress, 55% mild and 6.7% moderate stress, the laughter therapy is significantly effective in decreasing stress at P-value <0.001.<sup>[12]</sup> Another study by Kaur D (2014) titled Laughter a stress buster remedy among elderly people living in the old age homes revealed that the mean score in the pretest 10.86 was greater than posttest mean 4.8, significant at p < 0.05 which concluded that laughter intervention significantly diminishes stress among the elderly population.<sup>[13]</sup> These results were also consistent by Yoshikawa Y *et al* (2018) who found that Laughter therapy has a therapeutic benefit in a significant reduction in systolic blood pressure and heart rate and estimated to become a practical treatment to improve quality of life of elder people in the daycare centre.<sup>[14]</sup>

Other studies by Demir M (2015) study elicited that Laughter therapy may decrease anxiety, stress, and depression and increase the quality of life in the cancer patient.<sup>[15]</sup> Sr. Daisy (2018) noticed that significant fall in the stress level of nursing students after laughter therapy (t= 1.761, df=14, p<0.05) which conclude that laughter therapy was effective in decreasing stress among nursing students.<sup>[16]</sup> Memarian A *et al* (2017) study exposed that laughter yoga could be beneficial techniques to reduce anxiety and improve sleep quality in patients with Parkinson's.<sup>[17]</sup> Francisco SD *et al* (2019) study indicate that the influence of integrative laughter therapy had a greater advance in measures of self-esteem, anxiety and happiness compared to common treatment.<sup>[18]</sup> Ghodsbin F *et al* (2015) found a statistically significant correlation between laughter therapy package and factors such as general health (P=0.001), somatic symptoms (P=0.001), insomnia and anxiety (P=0.001).<sup>[19]</sup>

The present study found that there was an association between the levels of stress among the elder people with their type of family. In contrary, Mani G *et al* (2014) study found that females had moderate and high-stress scores compared to males and Co-living status with spouse was a protective factor against stress.<sup>[20]</sup> A study by Thomas R (2017) revealed that there was no association between age with the stress of participants.<sup>[21]</sup> Jeyanthi MY (2017) study found that there was no association between the stress of an elderly person with selected demographic variables.<sup>[22]</sup>

### Implications and Recommendation

Nurse educator could use these laughter yoga techniques to reduce the stress level of elder people. Nurse administrators can organize workshops or continuous nursing education programs to update the knowledge of bedside and community health nurses regarding the management of stress level. This

module could help old age homes to improve the level of stress among elderly and help workers from Primary Health Centre and Community Health Centre to ensure the mental wellbeing of the elderly. A similar study can be replicated on a large scale and for a longer period for more reliability and effectiveness. Exploratory research design can be used to explore the feelings of the elderly using a qualitative approach.

## CONCLUSION

The study is concluded that laughter yoga intervention is effective in reducing the stress among the elderly population in old age homes. The overall findings of the study showed that there is a significant association found between the levels of stress among the elder people with their type of family. A mixed-method approach can be used to explore comprehensive findings in future studies.

The study is limited to the elderly people who are residing in selected old age homes in Uttar Pradesh, India and who are physically able to participate in the study.

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## Conflicts of Interest

There are no conflicts of interest

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