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A COMPARATIVE STUDY TO ASSESS THE EFFECTIVENESS OF MINDFULNESS ACTIVITY ON STRESS AMONG ELDERLY PERSONS RESIDING AT OLD AGE HOME AND SELECTED AREAS AT COMMUNITY IN GUJARAT

VELUMANI S[1*] AND PATEL P[2]

1: Professor & HOD, Mental health Nursing, Sumandeep Nursing College, Sumandeep Vidyapeeth Deemed to be University, Piparia, Vadodara, Gujarat, India.

2: MSc Nursing, Sumandeep Nursing College, Sumandeep Vidyapeeth Deemed to be University, Piparia, Waghodia, Vadodara, Gujarat, India

[*]**Corresponding Author: Dr. Suresh Velumani: E Mail: vss_ssh@yahoo.co.in**

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ABSTRACT

Background: The concern regarding stress among seniors, stemming from factors such as deteriorating quality of life, diminished independence, and restricted social engagement, prompted a focus on effective stress management. Mitigating the grip of stress is crucial for enhancing well-being, vitality, and productivity. **Aim:** This study aimed to assess the efficacy of mindfulness interventions in alleviating stress experienced by elderly individuals residing in both old age homes and community settings. **Materials and Methods:** This study employed a quantitative research approach and utilized a quasi-experimental design. The research was conducted within the premises of old age homes and throughout the wider community in Vadodara, Gujarat. A sample size of 68 participants was meticulously chosen through the non-probability purposive sampling technique. The evaluation of mindfulness's influence on stress encompassed a comparative analysis of stress levels between two distinct experimental groups. **Results:** The application of mindfulness practices yielded a notable reduction in stress levels for participants within both experimental groups. The findings highlighted a significant improvement in stress management subsequent to mindfulness engagement. **Conclusion:** The

study concluded that mindfulness interventions effectively diminished stress levels among elderly individuals, reinforcing its potential as a valuable approach in enhancing the well-being of this demographic.

Keywords: Mindfulness, stress, elderly individuals, Old age home, Community

INTRODUCTION:

Ageing embodies a dynamic and progressive process marked by a cascade of morphological, biochemical, functional, and psychological shifts within the organism **[1]**. As an individual advances in age, their diminished reserve capacity renders them more susceptible to stressors, heightening their vulnerability and augmenting the risk of succumbing to strains that a younger counterpart might readily withstand **[2]**. While certain levels of stress are inherent and manageable, and in some cases even beneficial for the body, chronic stress assumes a detrimental role, exerting negative effects on the well-being of aging individuals in multifarious ways **[3]**. The term "stress management" encompasses a diverse array of methods, approaches, and strategies aimed at effectively dealing with stress and mitigating its adverse impacts on both physical and mental health. Various techniques can be employed to manage stress, classified into three overarching categories: behavioral, emotional, and mental strategies **[4]**. Among the range of effective stress management techniques, notable practices include guided imagery, meditation, progressive muscle relaxation, deep breathing exercises, engaging in walks, seeking physical affection, incorporating aromatherapy, fostering creativity, maintaining a nutritious diet, considering stress relief supplements, participating in leisure activities, cultivating positive self-talk, embracing yoga, expressing gratitude, engaging in regular exercise, reassessing priorities, seeking social support, and addressing sources of stress **[5]**. Mindfulness-based stress reduction (MBSR) stands as a structured group program that harnesses the power of mindfulness meditation to alleviate suffering associated with physical, psychosomatic, and psychiatric disorders **[6]**. People across the globe are experiencing extended lifespans, with a majority now anticipating living well into their sixties and beyond **[7]**. This demographic shift underscores the widespread occurrence of old age, a phase characterized by a host of challenges that seniors universally encounter and must adapt **[8]**. To address the issue of chronic stress, several avenues are available. Engaging in mindfulness practices, adhering to a consistent exercise regimen that includes relaxation-focused activities like yoga, maintaining a balanced and nutritious diet, participating in volunteering or

community engagements, and fostering social connections with fellow seniors, family, and friends are among the potential solutions **[9]**. Originating in 1970 through the work of Kabat-Zinn **[10]**. Mindfulness-based Stress Reduction (MBSR) has gained considerable prominence as a method for enhancing mental well-being and sleep quality. This approach to meditation has demonstrated its efficacy in regulating emotions among patients, culminating in diminished levels of stress, pain, and psychological symptoms **[11, 12]**.

The need for this study arises from the growing recognition of the challenges faced by elderly individuals residing in old age homes and community settings in Gujarat. Ageing is accompanied by various physiological, psychological, and social changes that can contribute to elevated stress levels among this demographic. The shift from independent living to communal arrangements, as seen in old age homes, can result in feelings of isolation, reduced autonomy, and increased dependence, all of which may contribute to heightened stress. Furthermore, seniors residing within the broader community also encounter stressors associated with aging, such as health-related concerns, changes in social roles, and potential loneliness. The impact of stress on the overall well-being of the elderly is significant, affecting their quality of life, mental health, and physical resilience.

Given the potential benefits of mindfulness activities in managing stress, it becomes imperative to evaluate its effectiveness among elderly individuals. This study aims to bridge the existing gap in knowledge by conducting a comparative analysis of the impact of mindfulness interventions on stress levels among two distinct groups: elderly residents of old age homes and those living within the community. Understanding the differential effects of mindfulness activities on stress within these two settings can inform targeted interventions that cater to the unique needs and challenges faced by elderly individuals in varying living arrangements. By assessing the efficacy of mindfulness-based stress reduction, this study seeks to contribute valuable insights that could enhance the overall well-being and quality of life for seniors in Gujarat.

MATERIALS AND METHODS:

The conducted study employed a quantitative research approach and utilized a Quasi Experimental research design. The research design involved two experimental groups, each undergoing a pre-test (O1) to assess stress levels among elderly individuals, an intervention comprising mindfulness activities (EX1) aimed at stress reduction, and a post-test (O2) to evaluate stress levels following the intervention. The independent variable was "Mindfulness," while the dependent variable was "Stress." The study focused on elderly individuals

and was conducted within selected old age homes and community areas in Gujarat, with data being sourced from these designated locations. The sample size was estimated at 68, determined through calculations that considered a population proportion of 0.5, a margin of error of 0.05, and a Non-Probability, Purposive Sampling Technique. Inclusion criteria encompassed elderly individuals experiencing stress, residing at the specified locations, and possessing physical and mental wellness. Conversely, exclusion criteria covered factors such as respiratory illnesses, Alzheimer's disease, unwillingness to participate, ongoing major psychiatric treatment, and alternative therapy. The study employs a data collection tool comprising two sections to investigate the well-being of elderly individuals. Section A focuses on socio-demographic factors, encompassing variables such as age, duration of stay at the old age home, reasons for residency, gender, marital status, education, overall life satisfaction, stress related to family members' lives, and other health conditions. This section is tailored for both elderly persons in old age homes and community settings. In Section B, the Perceived Stress Scale is utilized to assess stress levels among the elderly. The interpretation of scores is categorized as follows: scores of 0-13 indicate low stress, scores of 14-26 denote moderate stress, and scores of 27-40 signify high perceived stress. To ensure the tool's validity, experts with teaching experience, qualifications, and interest are involved in evaluating and providing suggestions for improvement. Reliability is established with a reported reliability coefficient of 0.81 for the modified Perceived Stress Scale. Data collection is carried out following permissions obtained from relevant authorities at the chosen old age home and community area, each lasting for a duration of 10 days for both experimental groups – the elderly residing in the old age home and those in the community area in Vadodara. The data collection procedure commenced on DAY-1, with the researcher initiating contact and obtaining informed consent from elderly participants in either selected old age homes or community settings. A pre-test was then administered using the socio-demographic tool and Perceived Stress Scale to gauge participants' socio-demographic information and stress levels. Subsequently, the researcher introduced and instructed mindfulness activities to the elderly participants, encompassing various techniques. Technique 1 focused on controlled inhalation and exhalation, while Technique 2 emphasized "Breathe and Focus" to alleviate anxiety and tension. Technique 3, "Alternate Nostril Breathing," targeted tension reduction and headaches, while Technique 4, "Lion's Breath," aimed at stimulating exhalation. Technique 5,

"Belly Breathing," encouraged stress reduction through deep inhalation and exhalation. Technique 6 involved bending and standing with breath coordination, Technique 7, "Sitali Breath," promoted relaxation, and Technique 8, the "Deep Breathing Technique," aimed to enhance oxygen intake and relaxation. From DAY-2 to DAY-9, the same mindfulness activities were practiced daily by the elderly participants under the researcher's guidance. On DAY-10, the mindfulness activities were once again practiced before the researcher conducted a post-test using the Perceived Stress Scale to assess changes in stress levels. This comprehensive data collection procedure aimed to explore the impact of mindfulness activities on stress among elderly individuals in the chosen settings.

RESULTS:

The study result revealed that the distribution of stress levels in a pretest among elderly individual in both Experimental Group One and Experimental Group Two, with a total of 68 participants. In Experimental Group One (n=34), all participants (100%) experienced a moderate level of stress, while none exhibited low or high stress. In Experimental Group Two (n=34), the majority (97.05%) had a moderate stress level, with a minority (2.94%) showing high stress, and none falling into the low-stress category. To summarize, both groups predominantly displayed moderate stress levels in their pretest scores, with Experimental Group One entirely in this category, and Experimental Group Two primarily in the moderate range, with a small fraction experiencing high stress, and no participants indicating low stress levels.

The **Table 1** presents the results of a paired 't' test used to assess the effectiveness of a mindfulness intervention in Experimental Group One. Before the intervention, the mean score was 20.5882 with a standard deviation (SD) of 2.49991, and after the intervention, the mean score decreased to 15.5588 with an SD of 2.12048. The mean difference between the pre-test and post-test scores was 5.029. The 't' statistic was calculated to be 18.065, and the p-value associated with this 't' statistic was less than 0.005, indicating a statistically significant difference. These findings suggest that the mindfulness intervention had a significant positive impact on the participants' scores in Experimental Group One, leading to a notable reduction in their stress levels.

The **Table 2** illustrates the effectiveness of a mindfulness intervention in Experimental Group Two using a paired ’t’ test. Before the intervention, the mean score was 20.7059 with a standard deviation (SD) of 2.56467, and after the intervention, the mean score decreased to 15.8529 with an SD of 1.9715. The mean difference between the pre-test and post-test scores was 4.85. The ’t’

statistic was calculated to be 17.11, and the p-value associated with this 't' statistic was less than 0.005, indicating a highly significant improvement. This demonstrates that the mindfulness intervention had a substantial and statistically significant positive effect on the participants' scores in Experimental Group Two, leading to a significant reduction in stress levels.

The **Table 3** presents the results of a sample independent t-test comparing pretest mean stress scores between two experimental groups, Experimental Group One and Experimental Group Two. The t-test results indicate that, with a p-value of 0.849 (greater than the chosen significance level of 0.05), there is no statistically significant difference in pretest stress scores between these two groups. In other words, the data doesn't provide strong evidence to conclude that the groups differ in terms of stress levels at the pretest stage.

Table: 1 Paired 'T' Test to Show the Effectiveness Before and After Giving Mindfulness Intervention In Experimental Group One (n=34)

Intervention in Experimental Group One	Mean	SD	Mean Difference	't'(p-Value)
Total score before intervention	20.5882	2.49991	5.029	18.065 (0.000)
Total score after intervention	15.5588	2.12048		

***p<0.05 level of significance**

Table 2: Paired 'T' Test to Show the Effectiveness Before and After Giving Mindfulness Intervention In Experimental Group Two (n=34)

Intervention in Experimental Group Two	Mean	SD	Mean Difference	't'(p-Value)
Total score before intervention	20.7059	2.56467	4.85	17.11 (0.000)
Total score after intervention	15.8529	1.9715		

Table 3: Sample independent "t" test to show the difference in the pretest mean score between experimental group one and two (N=68)

Group	Mean	SD	Mean Difference	't'(p-Value)
Experimental Group One (n=34)	20.59	2.500	-.118	-0.192 (0.849)
Experimental Group Two (n=34)	20.71	2.565		

***p<0.05 level of significance**

DISCUSSION:

The findings of the present investigation, as determined through the utilization of the Perceived Stress Scale, reveal that a substantial proportion of elderly individuals in both the old age home and community settings cohorts exhibited moderate levels of stress. Consequently, it can be inferred that there exists no statistically significant disparity in the stress levels experienced by elderly individuals residing in old age homes as compared to those dwelling within community settings. In congruence with our study, a contemporaneous inquiry conducted by Sangeetha Kasinathan in the year 2023 ascertained that a predominant majority of elderly individuals were confronted with stress as well. Noteworthy stressors among the elderly population were predominantly associated with financial

concerns and the absence of familial support systems **[13]**. Significantly, within the context of the current investigation, the implementation of mindfulness interventions yielded demonstrable efficacy in the amelioration of stress levels among elderly individuals inhabiting both old age homes and community settings. It is pertinent to acknowledge that a study conducted by Julie Loebach Wetherell in 2017, which focused on the application of Mindfulness-Based Stress Reduction (MBSR) among older adults afflicted by anxiety or depressive disorders and subjective neurocognitive impairments, yielded conspicuous enhancements in memory, reduction of anxiety, mitigation of depressive symptoms, and overall clinical amelioration associated with MBSR **[14]**. Parallelly, a cognate study undertaken by Lotte Berk in 2017 posited that the 8-week MBSR program was not only feasible but also well-received by participants. These participants uniformly attested to the manifold benefits accrued through mindfulness practice. Furthermore, this study documented a discernible reduction in scores indicative of depressive and stress-related symptoms, in conjunction with an augmentation in quality of life and mindfulness quotient **[15]**. To reiterate, elderly individuals, regardless of their habitation in either old age homes or community locales, exhibited a consensual manifestation of moderate stress levels as discerned through the Perceived Stress Scale. Importantly, our investigation did not establish any statistically significant associations between these stress levels and various socio demographic variables.

CONCLUSION:

The study concluded that before the mindfulness activities, both groups of elderly people were dealing with a lot of moderate stress, especially in Experimental Group One where everyone had it. But after participating in mindfulness activities, Participants experienced less stress, and most of them were in the moderate stress category. The test comparing the two groups before the activities showed that they had similar stress levels. However, while looked at each group individually, found that the mindfulness activities significantly reduced participants stress levels. So, it seems like the activities were effective in helping both groups feel less stressed.

Conflict of Interest:

The authors declare that there is no any conflict of interest.

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