Perceived stress and the factors associated among the inmates of old age homes in Bangalore City

Sowjanya D[1], H R Raveendra Reddy[2], Madhu Sudhan S[3], Samvedhana Sheela S R[4]

[1]Department of Community Medicine, [3]Department of Forensic Medicine,
Shridevi Institute of Medical Sciences & Research Hospital, Tumkur.
[2]Department of Community Medicine, Vydehi Institute of Medical Sciences & Research Centre, Bangalore
[4]Medical Reviewer, Novo Nordisk GBS, India

Abstract

Background: Stress is one of the major issues for elderly due to health problem, reduced identity and their role in the society, interpersonal relationships, financial, demise of spouse or separation from loved ones. Prolonged and chronic stress in turn is potentially pathogenic. In addition, elderly in old age homes likely to have even more stress due to lack of social and / or family support. This study was carried out to estimate the prevalence of perceived stress and the factors associated with it among inmates of old-age homes in Bengaluru.

Materials & methods: Descriptive, cross-sectional study was conducted among 125 elderly inmates of five randomly selected old-age homes (OAHs) in Eastern and Southern-parts of Bangalore city, during the year 2018, using a semi-structured pre-tested data collection tool. Cohen's Perceived stress scale -10 (PSS) was used to estimate the prevalence of perceived stress. Data collected was tabulated and analysed using Epi Info Version 7.2.1. Data was interpreted by using appropriate descriptive and inferential statistics.

Results: Of the 125 subjects studied, 14 (11%) had low stress, 100 (80%) had moderate stress and 11 (8%) high stress. Duration of stay in OAHs and sleep disturbance were significantly associated with stress scores ($P<0.05$). Other factors studied were not significantly associated with the stress scores.

Conclusion: Perceived stress was high among elderly staying in old age homes. There is a need for organized support systems to improve the psychological health of elderly to address the issue of stress.

Keywords: Elderly, perceived stress, Old Age Homes, Perceived stress scale

Introduction

Stress is one of the major issues for elderly due to health problem and they are more likely to suffer from mental and psychological distress [1]. Reduced identity and their role in the society, often prevent them from participating fully in society and cause undue stress[2,3]. Stress and stress related problems have various effects on old age, their care giver and also in society[4]. The most frequent stressful life circumstances that affect older adults involve health, interpersonal relationships, financial or work-related events [5]. Demise of a spouse or separation from loved ones, deaths in the family and lack of social integration are common stressors, which may themselves cause physical and mental ill-health. Physical incapacity, decline in the mental faculties and feeling of the generation gap further add to the problems [2,3].

Prolonged and chronic stress in turn is potentially pathogenic[6]. Elderly in old age homes likely to have even more stress due to lack of social and / or family support. The inability to adopt stress is associated with the onset of depression or anxiety[7]. There are wide variations of results between the studies on stress among elderly people living in old age homes and no published studies on this aspect in Bangalore. Hence, this study was undertaken to estimate the prevalence of perceived stress using Cohen's Perceived stress scale[8] and the factors associated with it among inmates of old-age homes in Bengaluru.

Objectives: To describe the socio-demographic profile of the inmates in old age homes and to estimate the prevalence of perceived stress using Cohen's perceived stress scale among the study subjects

Address for Correspondence:

Dr. Sowjanya D

Assistant Professor, Department of Community Medicine,
Shridevi Institute of Medical Sciences & Research Hospital, Tumkur, Karnataka, India
Email: sowjanyad6@gmail.com

Materials and methods

A descriptive, cross-sectional study was conducted among elderly people, aged 60 years and above, living in old-ages homes (OAHs) of Bengaluru. Permission from the Department for Empowerment of specially abled and senior citizens and managements of OAHs was obtained. All the registered old age homes were situated in east and southern-parts of Bangalore city was line listed. Five old age homes were randomly selected from the list using Cluster random sampling technique and a total sample of 125 eligible elderly people, staying for ≥6 months studied. After obtaining the approval from the management of the old age homes, the participants were explained the need for the study and also informed that their identity will be kept confidential. A written consent was obtained from those who agree to participate in the study. Data was collected using pre-tested semi-structured, interviewer administered data collection tool. The data collection tool had following variables such as Socio-demographic profile (age, sex, education, type of family, marital status, financial dependency, duration of stay and sleep disturbance) and perceived stress using Cohen's perceived stress scale. Elderly persons aged 60 years and above staying in old age homes for more than 6 months, who were present on the day of our visit for data collection and who gave informed consent to be part of our study was eligible to participate in our study. Those who were critically ill and those who were not be able to respond to interview schedule was excluded in the study. Ethical clearance was obtained from Institutional ethical committee.

Sample size

The sample size was calculated for the study using the following formula:

Where, $P_=$ expected proportion;

$d_=$ absolute precision

$Z_{(1-\alpha/2)=}$ Confidence interval

Sample size was calculated based on the results of the study done by Varghese B, Issac SS & Varghese J[9], where the prevalence of stress reported among old age people was 50% (approx), 10% precision at 95% Confidence interval. Minimum required sample size was 106, Hence, we have taken a samples size of 125 for the study.

Statistical analysis:

Data was entered and analysed using Epi Info Version 7.2.1. Data was summarized and was presented in percentages, tables and graphs. Chi-square test was used to test association between various variables. P value <0.05 was considered as statistically significant.

Results

Out of 125 inmates of old age homes, 80 (64%) were females and 45 (36%) were males.

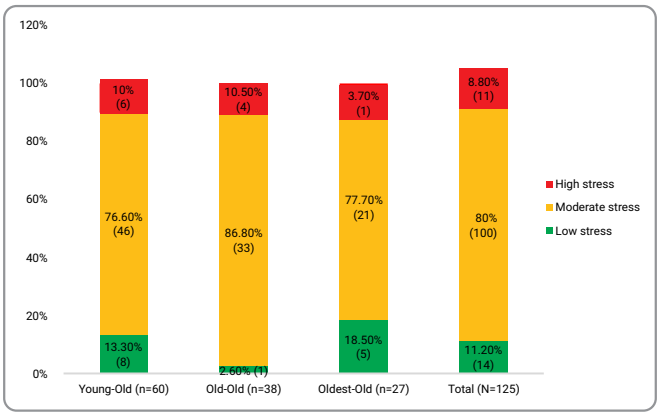

Figure 1: Gender specific distribution of elderly based on PSS score [N= 125]

Figure 1 depicts, out of 125 inmates of old age homes, 100 (80%) were in moderate stress, 14 (11.20%) were in low stress and 11 (8.8%) were in high stress. Out of 80 females, 64 (80%) were in moderate stress, 10 (12.5%) were in low stress and 6 (7.5%) were in high stress, whereas among 45 males, 36 (80%) were in moderate stress, 5 (11.1%) were in high stress and 4 (8.8%) were in low stress.

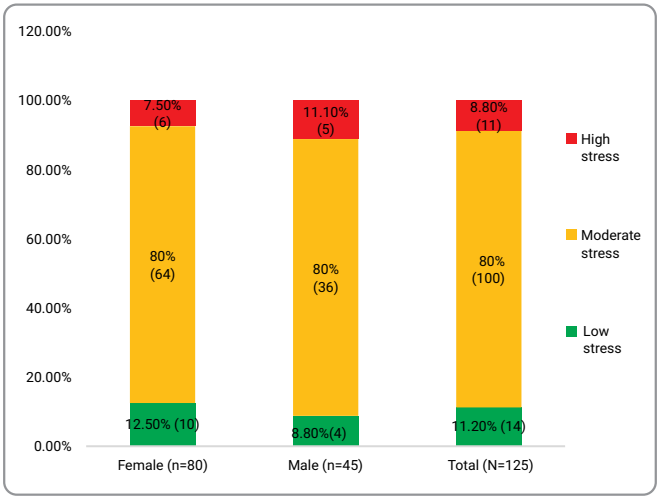

Figure 2: Age-group specific distribution of elderly based on perceived stress score [N= 125]

Figure 2 depicts, out of 60 young-old inmates of old age homes, 46 (76.6%) were in moderate stress, 8 (13.3%) were in low stress and 6 (10%) were in high stress, whereas in old-old age group, 33 (86.8%) were in moderate stress, 4 (10.5%) were in high stress and 1 (2.6%) were in low stress. Out of 27 oldest old inmates 21 (77.7%) were in moderate stress, 5 (18.5%) were in low stress and 1 (3.7%) were in high stress.

Table 1: Socio-demographic factors (Education and Type of family) associated with perceived stress in elderly in old age homes

Characteristics	Total N= 125 100%	Low stress (PSS score 0-13)	Moderate stress (PSS score 14-26)	High stress (PSS score 27-40)	P value
		N (%)	N (%)	N (%)	
Education					
Graduate or Postgraduate	17	02 (11.76)	14 (82.35)	01 (5.88)	0.683
Intermediate or Diploma	13	00 (00.00)	12 (92.30)	01 (7.69)	
High School	38	08 (21.05)	27 (71.05)	03 (7.89)	
Primary	24	04 (16.66)	19 (79.16)	01 (4.16)	
Illiterate	33	00 (00.00)	28 (84.84)	05 (15.15)	
Type of Family					
Nuclear	116	13 (11.21)	92 (79.31)	11 (9.48)	0.76
Joint	4	00 (00.00)	04 (100.00)	00 (00.00)	
Three generation	5	01 (20.00)	04 (80.00)	00 (00.00)	

Table 1 depicts, among 38 inmates who have studied up to High school, 27 (71.05%) were in moderate stress, 08 (21.05%) were in low stress and 03 (7.89%) were in high stress. Out of 33 who were illiterates, 28 (84.84%) were in moderate stress, 05 (15.15%) were in high stress and none in low stress. Among 24 who have studied up to Primary school, 19 (79.16%) were in moderate stress, 04 (16.66%) were in low stress and 01 (4.16%) were in high stress. Out of 17 who were graduates or postgraduates, 14 (82.35%) were in moderate stress, 02 (11.76%) were in low stress and 01 (5.88%) were in high stress. Out of 13 who have studied up to Intermediate/Diploma, 12 (92.30%) were in moderate stress, 01 (7.69%) were in high stress and none of them in low stress. There was no significant association between educational status with stress scores among inmates of old age homes (P=0.683).

Out of 116 inmates who belonged to Nuclear family, majority 92 (79.31%) were in moderate stress, 13 (11.21%) were in low stress and 11 (9.48%) were in high stress. Out of 5 who belonged to three generation family 04 (80%) were in moderate stress, 1 (20%) were in low stress and none of them in high stress. Out of 4 who belonged to joint family moderate stress, 04 (100%) were in moderate stress and none of them in low and high stress. There was no significant association between type of family with stress scores among inmates of old age homes (P=0.76).

Table 2: Socio-demographic factors (Marital status and Financial dependency) associated with perceived stress in elderly in old age homes

Characteristics	Total N= 125	Low stress (PSS score 0-13)	Moderate stress (PSS score 14-26)	High stress (PSS score 27-40)	P value
		N (%)	N (%)	N (%)	
Marital Status					
Unmarried	33	4 (12.12)	29 (87.88)	00 (00.00)	0.16
Married	18	01 (5.56)	14 (77.78)	03 (16.67)	
Separated	18	03 (16.67)	15 (83.33)	00 (00.00)	
Widowed	56	06 (10.71)	42 (75.00)	08 (14.29)	
Financial Dependency					
Fully Dependent	84	10 (11.90)	69 (82.14)	05 (5.95)	0.5619
Partially Dependent	31	03 (9.62)	23 (74.19)	10 (16.13)	
Independent	10	09 (10.00)	08 (80.00)	01 (10.00)	

Table 2 depicts, out of 56 who were widowed, majority 42 (75%) were in moderate stress, 8 (14.29%) were in high stress and 6 (10.71%) were in low stress. Out of 33 who were unmarried, 29 (87.88%) were in moderate stress, 4 (12.12%) were in low stress and none of them in high stress. Out of 18 who were married 14 (77.78%) were in moderate stress, 3 (16.67%) were in high stress and 1 (5.56%) were in low stress. Out of 18 who were separated, 15 (83.33%) were in moderate stress, 3 (16.67%) were in low stress and none of them in high stress. There was no significant association between marital status with stress scores among inmates of old age homes (P=0.16).

Out of 84 inmates who were financially fully dependent, 69 (82.14%) were in moderate stress, 10 (11.90%) were in low stress and 5 (5.95%) were in high stress. Out of 31 inmates who were partially dependent, 23 (74.19%) were in moderate stress, 10 (16.13%) were in high stress and 3 (9.62%) were in low stress. Out of 10 inmates who were independent, 9 (10%) were in low stress, 8 (80%) were in moderate stress and 1 (10%) were in high stress. There was no significant association between financial dependency with stress scores among inmates of old age homes (P=0.561).

Table 3: Socio-demographic factors (Duration of stay and Sleep disturbance) associated with perceived stress in elderly in old age homes

Characteristics	Total N= 125 100%	Low stress (PSS score 0-13)	Moderate stress (PSS score 14-26)	High stress (PSS score 27-40)	P value
		N (%)	N (%)	N (%)	
Duration of stay in OAHs					
<1 YEAR	43	4 (9.30)	30 (6 9.77)	09 (20.93)	0.0496
<5 YEARS	45	05 (11.11)	39 (86.67)	01 (2.22)	
<10 YEARS	20	03 (15.00)	17 (85.00)	00 (00.00)	
≥ 10 YEARS	17	02 (11.76)	14 (82.35)	01 (5.88)	
Sleep disturbance					0.006
Yes	55	02 (3.64)	43 (78.18)	10 (18.18)	
No	70	12 (17.14)	57 (81.43)	01 (1.43)	

Table 3 depicts, out of 45 who were staying for 5 years or less in old age homes, 39 (86.67%) were in moderate stress, 5 (11.11%) were in low stress and 1 (2.22%) were in high stress. Out of 43 who were staying a year or less, 30 (69.77%) were in moderate stress, 9 (20.93%) were in high stress and 4 (9.30%) were in low stress. Out of 20 who were staying 10 years or less, 17 (85.00%) were in moderate stress, 3 (15.00%) were in low stress and none of them were in high stress. Out of 17 who were staying 10 years or more,14 (82.35%) were in moderate stress, 2 (11.76%) were in low stress and 1 (5.88%) were in high stress. There was a significant association between duration of stay in old age homes with stress scores among inmates of old age homes (P=0.049).

Among 55 inmates who reported having sleep disturbance, 43 (78.18%) were in moderate stress, 10 (18.18%) were in high stress and 2 (3.64%) were in low stress. Among 70 inmates who reported not having sleep disturbance, 57 (81.43%) were in moderate stress, 12 (17.14%) were in low stress and 1 (1.43%) were in high stress. There was a significant association between sleep disturbance among inmates of old age homes with stress scores (P=0.006).

Discussion

The present study showed, among elders who reside at old age homes, 80% of cases had moderate stress, 11.20 % of cases low stress and 8.8% of cases were in high stress. Similar observations were found in study conducted by Panigrahi S and Dash B[10] showed 86.66% had moderate stress, 6.66% mild stress and 6.66% severe stress.

In the study conducted by Varghese B et al[9] reported that in the age group of 60-65 years, 50% had moderate stress, 28.6% low stress and 21.4% had high stress. Whereas in the age group 65-70 years, 27.3% had moderate stress, 54.5% high stress, 18.2 % low stress and in age group 71-75 years, 80% had moderate stress, 20% low stress and none in high stress. Similar findings were also found in our study, in age group of 60-69 years, 76.6% were in moderate stress, 13.3% in low stress and 10% high stress, whereas in 70-79 years age group, 86.8% were in moderate stress, 10.5% in high stress and 2.6% low stress and in age group of 80-89 years, 77.7% in moderate stress, 18.5% in low stress and 3.7% in high stress.

In the current study, it was observed that, irrespective of education status, majority had moderate stress scores, however those who lack education had higher stress scores. Among financially fully dependent and partially dependent participants, majority had moderate and higher stress scores compared to financially independent who had moderate and lower stress scores. Similar findings are in concordance with study conducted by Mani G et al[11] reported that, among illiterates and those who had education till primary school, had moderate and higher stress scores (illiterates - 60% moderate stress score, 20% high stress score and Primary school participants - 41.7% moderate stress scores, 33.3% high stress score). Financially dependent study participants, 60.7% presented with moderate stress, 21.4% high stress scores and in financially independent

individuals 59.7% had moderate stress and 23.6% low stress scores.

In our study, among married and widowed participants, majority showed moderate and higher stress scores and nuclear family type of participants had moderate and higher stress scores. These findings are similar to study conducted by Varghese B et al [9] However our present study also showed unmarried and separated individuals had moderate and lower stress scores and those who had sleep disturbance had moderate and higher stress scores.

In our study, it was also observed that, among those inmates who stayed for less than 1 year, had moderate and high stress scores i.e. 69.7% and 20.9% respectively. However, those who stayed 1-5 years, 5-10 years and more than 10 years in old age homes, majority participants had moderate stress and low stress scores. These findings are in contrast with the study conducted by Mani G et al[11] reported that inmates who stayed for less than 2 years, had moderate and lower stress scores (75% and 14.3%), whereas those inmates who stayed for more than 2-5 years and more than 5 years had moderate and higher stress scores i.e. 54.5%, 18.2% and 53.8% and 23.1% respectively.

Limitations & Recommendations

The study design had no comparison group with the community dwelling, the influence of extraneous factors could not be studied. There is a need for organized support systems to improve the psychological health of elderly to address the issue of stress.

Conclusion

Perceived stress was high among elderly staying in old age homes. There was no significant association between educational status, type of family, marital status and financial dependency with stress scores among inmates of old age homes (P>0.05). Duration of stay in OAHs and sleep disturbance were significantly associated with stress scores (P<0.05).

Acknowledgements

We are grateful to all the participants who dedicated their time to take part in this study.

References

1. *Banker K, Prajapati B, Kedia G. Study of health profile of residents of geriatric home in Ahmedabad district. Natl J Community Med 2011; 2:378-82.*
2. *Moos RH, Brennan PL, Schutte KK, Moos BS. Older adults' coping with negative life events: common processes of managing health, interpersonal, and financial/work stressors. Int J Aging Hum Dev 2006; 62:39-59.*
3. *Wang JJ. Prevalence and correlates of depressive symptoms in the elderly of rural communities in southern Taiwan. J Nurs Res 2001; 9:1-12.*
4. *World Health Organization. Mental health of older adults [Internet]. Geneva: WHO; c2025 [cited 2025 Jul 22]. Available from: https://www.who.int/news-room/fact-sheets/detail/mental-health-of-older-adults*
5. *Hardy SE, Concato J, Gill TM. Stressful life events among community-living older persons. J Gen Intern Med 2002;17(11):832-8. doi:10.1046/j.1525-1497.2002.20105. x. PMID: 12406354; PMCID: PMC1495128.*
6. *American Psychological Association. How does stress affect us? [Internet]. Washington, DC: APA; c2007 [cited 2025 Mar 12]. Available from: http://www.psychcentral.com/lib/2007/how*
7. *Hosseini FS, Sharifi N, Jamali S. Correlation of anxiety, stress, and depression with perceived social support among the elderly: a cross-sectional study in Iran. Ageing Int 2021; 46:108-14. doi:10.1007/s12126-020-09376-9.*
8. *Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. J Health Soc Behav 1983; 24:385-96.*
9. *Varghese B, Issac SS, Varghese J. A descriptive study to assess the level of stress among elderly people residing at old age homes, Uttar Pradesh (India). Int J Res Rev 2020;7(11):392-5.*
10. *Panigrahi S, Dash B. Stress and coping strategies among senior citizens in selected old age home, Berhampur. J Nurs Educ Pract 2015;21-5.*
11. *Mani G, et al. Perceived levels of stress and its correlates among residents of old age home in Kanchipuram District, Tamil Nadu. Med J Dr DY Patil Univ 2014;7(6):728-31. doi:10.4103/0975-2870.144860.*

Conflict of interest: Nil
Source of funding: Nil

Date received: Jul 23, 2025
Date accepted: Oct 31, 2025