Lata Pujar
Professor and Head, Department of Human Development and Family Studies, College of Community Science, University of Agricultural Sciences, Dharwad, Karnataka, India

Sumangala Badami
Assistant Professor, Department of Human Development and Family Studies, College of Community Science, University of Agricultural Sciences, Dharwad, Karnataka, India

Health status, nutritional status and stress level among institutional and non-institutional elderly women

Lata Pujar and Sumangala Badami

Abstract
A total of one twenty women elderly under the age group of 65 to 80 years, residing in homes (n=60) and two old age institutions (n=60) at Dharawd Taluka and Dharwad city were selected for the study. General information pretested schedule was used to elicit auxiliary information of the subjects, nnutritional status was assessed by calculating Body Mass Index (BMI) and Body Adiposity Index (BAI). Socio Economic Status scale (Aggarwal *et al.,* 2005) was employed to assess the SES of the family and PGI scale was used to assess the physical health systems of the elderly. Data was collected through interview method by individually administering the standardised scales.
Result revealed that majority of the institutional elderly women found to be in the severe category of health status (76.67). Wherein 48.33 percent non institutional elderly were in severe category of health status. Significant difference was observed between institutional and non institutional elderly women (5.47**) with respect to health status, where non institutional were in better health status. Institutional elderly women were cautious about their health than non institutional elderly women. Non institutional elderly women were under normal category of BMI. Significant difference was observed between institutional and non institutional elderly with respect to basal adipose index. Majority of the Institutional female elderly (75%) were found to be under the high stress level category and were susceptible towards stress . General health status was positively and significantly correlated with body adipose index and low stress level and BMI found to have positive and significant correlation with BAI and low stress level. The correlation factor showed that better the health status better the BAI and low stress level.

Keywords: Elderly, body mass index, body adiposity index, stress, institutional elderly

Introduction

Ageing is a normal biological phenomenon. Change in the biological aspect results from the impact of the accumulation of a variety of molecular and cellular damage. This leads to a gradual decrease in physical and mental activity and can increase the risk of disease and ultimately death. According to the WHO report (2015), 60 years and above were 900 million in the world population and it is expected to a total of two billion, likewise, 80 years and above are about 125 million people now and by 2050 this will be 436 million worldwide. More than 80 percent of the older people will be living in the lower and middle income categories.

With the gradual erosion of family ties and the emergence of the nuclear family as the dominant type of family unit, the care giving responsibility of the elderly is gradually shifting to the formal sector. The nuclear families which are unable to take charge of the elderly due to many socio-economic and cultural constraints have begun to seek assistance from formal institutions engaged in elderly care. The living environment of the elderly is a critical factor, affecting their health and longevity (Winningham and Pike 2007) [20]. Almost all elderly people, particularly those living in institutions, experience a lot of social deficiencies and failures in the social support network (Alamdarlou *et al*. 2008) [2]. Research has shown a higher level of psychological well-being among old people living in the household than those residing in nursing homes (Kwang *et al*. 2003; Sun 2001) [11, 18]. Amongst the common psychological problems of the elderly are depression, anxiety, stress, and dementia. World Health Organization has reported that psychological disorders, particularly anxiety, are on the rise today with anxiety levels of 38.6% and 83.2% in developing and advanced countries, respectively.

Stress is a feeling of pressure, tension, worry causing physical, social, psychological and emotional distress to an individual. Stress is necessary for our survival but when it goes beyond the tolerance level it might lead to so many psychological problems. Level of stress varies due to so many factors like age, physical strength, living condition, financial condition,

Corresponding Author
Lata Pujar
Professor and Head, Department of Human Development and Family Studies, College of Community Science, University of Agricultural Sciences, Dharwad, Bihar, India

marital status, peer pressure, academic pressure, sudden loss or death of a loved person, nature of stressors and length of the stress etc. Level of Stress in old age is gradually increasing these days as the life style, security and economic commitment, social life and gathering is influencing them. Stress level in old age mostly associated with the living conditions. As the emotional, personal and physical comforts are met the stress is less and vice versa.

As the increasing number of elderly people will face society with physical, psychological, and social problems and issues, the aging and special conditions of the elderly and their mental and physical health are among the issues demanding special attention. Understanding the characteristics of the elderly community can be an introduction to improving their quality of life depending on their different lifestyles (living in the family or independently) because the assessment of the health status among a group of people is very important to decide the type of intervention and prediction of social, health, and psychological requirements. The main purpose of this study was to carry out a situational analysis of the elderly under institutionalized care and home care in order to identify issues that need to be addressed to recommend suitable social work intervention strategies to resolve issues identified in the said care giving institution and to share the knowledge thus gained in the formulation of relevant policies and strategies at the national level.

Methodology
Research Design
The sample were selected by purposive random sampling method. Elderly people belonging to the age group 65 to 80 years & residing in homes and old age institutions were selected. A total of 120 women elderly from two old age homes at Dharawd Taluka and 60 elderly staying in homes at Dharwad city were selected for the study.

Tools and measures
General information pretested schedule was used to elicit auxiliary information of the subjects regarding age, gender, family composition, nnutritional status was assessed by calculating Body Mass Index (BMI) and Body Adiposity Index (BAI). Socio Economic Status (Aggarwal et al., 2005) [1] was employed to assess the SES of the family, education, occupation, income, and caste. PGI scale was used to assess the physical health systems like, digestion, circulation, excretion and problems related to the organs like eyes, hands and legs. The scale consisted of sixty items and two point rating scale with yes (1) & No (0) type of scoring.

According to the tool it has been categorised as mild, moderate and severely affected based on the total score. Stress Index Questionnaire (Ivancevich and Matteson, 1980) [9] was used to assess the general stress level of institutional and non institutional elderly women. It consisted of 20 items and was used to assess the general stress level. Each item had 2 alternatives like NO and YES and were rated as 0 and 1 respectively.

Data collection procedures
Data was collected through interview method by individually administering the standardised scales. Elderly women were personally contacted in their homes and institutions and were briefed about the purpose of the study and interviewed. A pre-designed questionnaire was used for data collection. The case studies were conducted to get information on health problems, nutritional status and stress level of elderly women. Frequency and percentage were used to interpret the familial characteristics. Comparison between two groups was measured by t-test. Karl Pearson's correlation coefficient analysis was carried out to assess the degree of relationship between physical health, nutritional status, stress level and socio-economic status of the women elderly.

Results and Discussion-
The results of the study on health status, nutritional status and stress level among Institutional and Non institutional female elderly is presented in tables 1-4.

Table 1: Health status of Institutional and Non-Institutional elderly women N=120

| Location	Health status			Total (%)	Mean ± SD	t value
	Mild	Moderate	Severe			
Institutional elderly women (n=60)	-	14 (23.33)	46 (76.67)	60 (100.00)	107.97±10.53	5. 471**
Non Institutional elderly women (n=60)	24 (40.00)	07 (11.67)	29 (48.33)	60 (100.00)	93.00±17.49	
Total (%)	24 (20.00)	21 (17.50)	75 (62.50)	120 (100.00)		

Figures in the parenthesis indicates percentages,
** Significant at 0.01 level of probability

Table 1 depicts health status of institutional and non institutional elderly women. Majority of the institutional elderly women found to be in the severe category of health status (76.67) and moderate level (23.33). None of them belonged to the mild category of health status. Wherein 48.33 percent non institutional elderly were in severe category, followed by mild (40%) and moderate level (11.67%) of health status. Significant difference was observed between institutional and non institutional elderly women (5.47**) with respect to health status in which non institutional elderly were better with their health status compared to their counterpart institutional elderly women. The reason could be that elderly women experiencing severe health complication as compared to non –institutional elderly, loss of partner, and migration of children & being away from their family members lead them in to the situation of negligence towards health and no proper care in times. The results are in line with the study by Lakshmidevi (2013) [12], Battalwar (2014) [3, 15] and Bhat and Yadavannavar (2017) [5] where more elderly women from institutional settings reported low level of quality of life and elderly suffered from more health issues as compared to males and reported of suffering from one or multiple chronic illnesses.

With respect to BAI and BMI classification it is depicted from the Figure 1 & 2 that, majority of the institutional elderly women found to be in healthy category (73.3%), followed by underweight and overweight (13.33%). Wherein 56.7 percent non institutional elderly women were under the normal category of health followed by overweight (38.33%) and underweight (5%) and none of them were in the obese category. Compared to non institutional elderly women, institutional residents were found to be cautious about their health and undergoing regular health check-ups, monitored by regular visiting doctors and care by institutional workers.
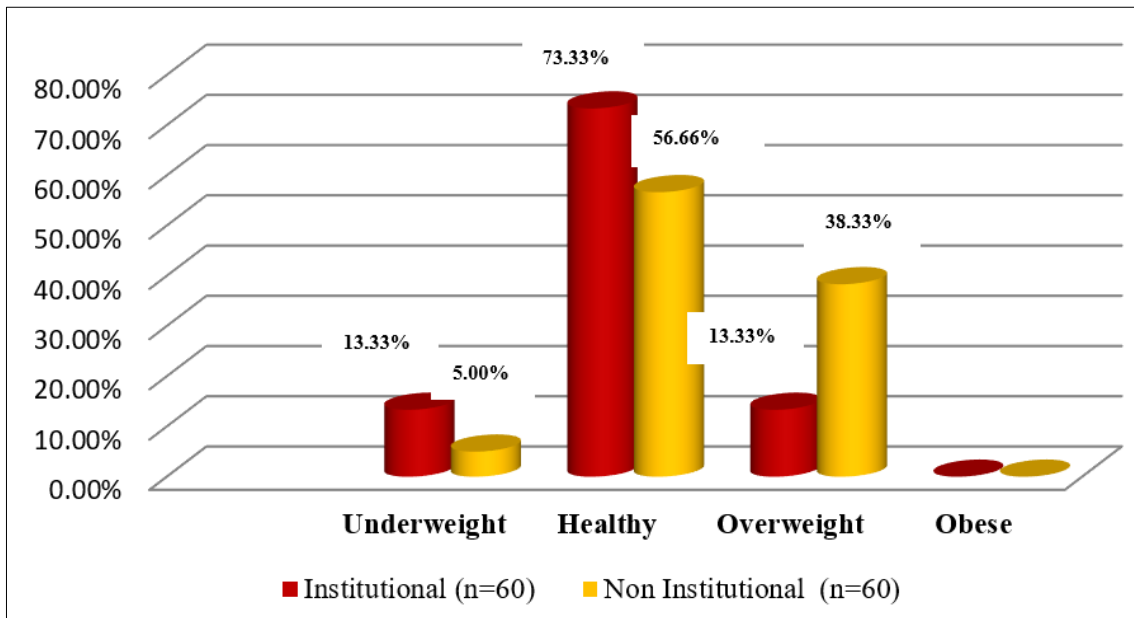
Fig 1: Nutritional status of Institutional and Non Institutional elderly women based on BAI classification
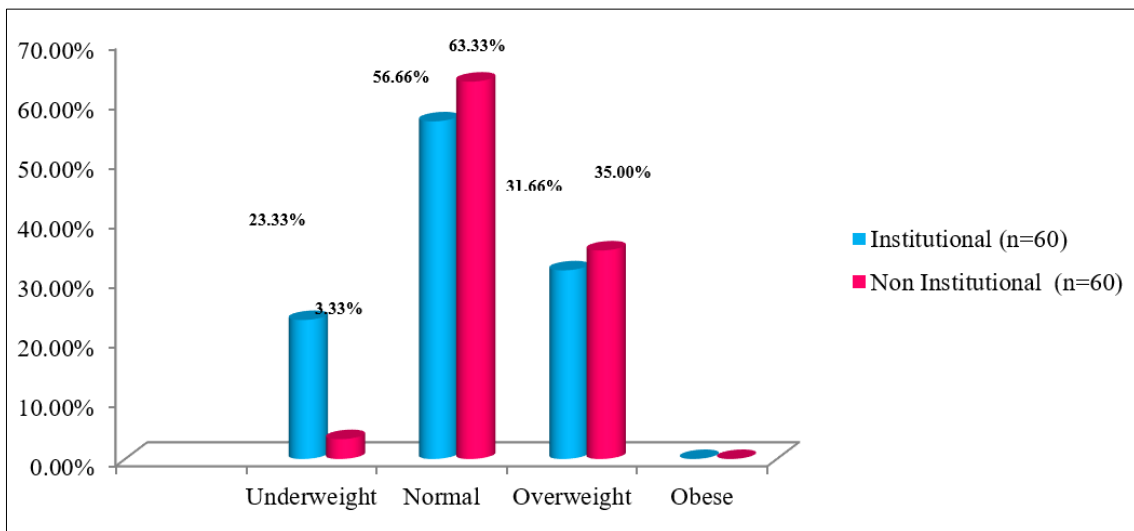
Fig 2: Nutritional status of Institutional and Non Institutional elderly women based on BMI classification

With respect to BMI classification, majority of the Non Institutional elderly women were under normal category (63.33%) of BMI, followed by Overweight (35%) and underweight (3.33%). Whereas 56.66 percent Institutional elderly women were in the category of normal followed by overweight (31.66%) and underweight (23.33%) respectively. None of them were belonged to the category of obese. Concern for the institutional elderly who were underweight require extra care. The reason could be due to the risk of

being deficient in important nutrients, vitamins, weakness, digestion problem and susceptibility to health problems. The study is in accordance with Bhat and Yadavannavar (2017) [5] who reported that majority of the elderly women (41.2%) were found to be undernourished with a body mass index (BMI) of less than 18. Only 26.7% of them were found to be having a normal BMI. 10.9% were overweight and 13.3% were obese.

Table 2: Comparison between nutritional & health status of Institutional and Non-Institutional elderly women (N= 120)

Particulars	Mean Scores		't' value
	Institutional (n=60)	Non-Institutional (n=60)	
Nutritional Status (BMI)	21.82±3.37	22.28±3.54	0.73[NS]
Nutritional Status (BAI)	30.60±5.89	33.66±4.91	3.09**
Health status	93.55±17.48	107.97±10.52	5.47**

** Significant at 0.01 level of probability, NS: Not Significant

It is clear from the table 2 that, Institutional and Non Institutional were in the equal status of Body Mass Index. Significant differences were observed between Institutional and Non institutional elderly with respect to Basal Adipose

Index, where as health status was better in Non Institutional elderly women than Institutional elderly women counterparts. The reason for the better health among institutional elderly might be because of staying with family members made them

feel secured and spending time with grand children and involving in leisure time activities. Results are in line with the study conducted by Benksim, Addi, Khalloufi, Habibi and Cherkaoui (2021) [4] who reported that Institutional residents suffered from malnutrition, suffered from poor nutritional

status, mouth and hearing problems. These findings encourage health care providers and government agencies to enhance the quality of life, with supplementary attention giving to older women and those living in institutions.

Table 3: Comparison between stress level among Institutional and Non Institutional elderly women N=120

	Stress Level			Total (120)	Mean ±SD	t-test
	Low	Average	High			
Institutional (n=60)	-	15 (25.00%)	45 (75.00%)	60 (100.00)	11.83±5.73	2.71**
Non-Institutional (n=60)	3 (5.00%)	34 (56.66%)	23 (38.33%)	60 (100.00)	8.68±7.01	

Figures in the parenthesis indicates percentages ** Significant at 0.01 level of probability

Table 3 depicts that majority of the Institutional elderly (75%) were found to be under the high stress level category and average (25%) category of stress. Whereas 56.7 percent elderly women from Non institutional were in the average category of stress, followed by high stress (38.33%) and low (5%) stress level respectively. Institutional elderly women were found to be susceptible with regard to stress level than their counterpart Non Institutional elderly**.** The probable reasons may be loneliness, being away from the family & loved ones, health related complications, poor diet might have made stress sever. Low stress level of non institutionalized women may be attributed to the fact that they have an active family life, with their loved ones , emotional and social support, sound financial conditions contribute for low stress level. The study is in concurrence with the research by Shailaja and Sreenivas (2018) [16] who reported that Institutionalized elderly women showed higher level of stress when compared to non-institutionalized. Wherein Singh (2018) [17], Liguori, (2018) [13] and Jamwal (2016) [10] reported that elderly living in institutions have diminished quality of life in comparison to elderly living within family set up.

Table 4: Inter-correlation between health status, BMI, BAI and Stress level among Institutional and Non-Institutional elderly women N-120

Particulars	PGI	BMI	BAI	Stress
PGI	1	0.129	0.247**	.393**
BMI	0.129	1	0.571**	0.448**
BAI	0.247**	0.571**	1	.0398**
Stress	0.393**	0.448**	0.398**	1

** Correlation is significant at the 0.01 level (2-tailed).

Table 4 clearly depicts that general health status (PGI) is positively and significantly correlated with body adipose index (BAI, 0.247**) and low stress level (0.393**), BMI is having positive significant correlation with BAI (0.571**) and low stress level (0.448**). Body Adipose Index is positively and significantly correlated with general health , body mass index and stress level which shows that better the health status better the BAI and low stress level.

Conclusion
Significant difference was observed between institutional and non institutional elderly women, where non institutional were in better health status. Institutional elderly women were cautious about their health than non institutional elderly women. Non institutional elderly women were under normal category of BMI. Significant difference was observed between institutional and non institutional elderly with respect to basal adipose index. Majority of the Institutional female elderly were found to be under the high stress level category

and were susceptible towards stress . General health status was positively and significantly correlated with body adipose index and low stress level and BMI found to have positive and significant correlation with BAI & low stress level. The correlation factor showed that better the health status better the BAI & low stress level.

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