

Stress level among the geriatric population of urban area in eastern Nepal

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ABSTRACT

Stress is part of everyone's life which may be severe in geriatric population due to multiple and interrelated factors. A cross sectional study was carried out among hundred geriatric people living in an urban area of Dharam with an aim of identifying the level of stress in this population and to find out its association with different demographic variables. Convenient sampling technique was used to collect data. Instrument containing twenty five questions related to physical, psychological and socioeconomic stress was used. Data was analyzed by using percentage, frequency and inferential statistics (Chi-square test). Out of hundred respondents 67 % were in the age group of 65 to 75 years. Fifty one percent of the respondents had moderate stress, 40% had mild stress and remaining 9% had severe stress. Stress was significantly associated with variables such as age, education level, personal income, and financial dependence. Overall result is that geriatric population experience moderate to severe stress which varies in severity. The study findings call for the attention from concerned authorities to plan appropriate measures in order to minimize the stress among geriatric populations. Hence, their life can become productive and they can have improved quality of life.

Keywords: Level of stress, geriatric people

INTRODUCTION

Ageing is a universal process. In the words of Seneca "old age is an incurable disease. "But more recently Sir Sterling Ross commented "You don't heal old age, you protect it, you promote it and you extend it. Old age should be regarded as a normal inevitable biological phenomenon.¹ Old age is also known as late adulthood, which usually means the phase of life cycle beginning at age 65.² World Health Organization classified old age as: 65 - 75 years as young old, 75 to 85 years as old and above 85 years as elderly.³ Due to various reasons populations' ageing is the major achievement of 20th century.² According to 2001 census of Nepal, population of elderly people aged 65 years and above increased from 2.43% in 1911 A.D to 4.21% in 2001 A.D.⁴ The expectation of life at birth for males and females was 60.1 and 60.7 respectively in 2001 which were 55 and 53.5 years respectively in 1991.⁵

Lazarus and Folkman in 1984 described that stress is defined as an internal state which can be caused by physical demands on the body (diseases condition, exercise) or by environmental and social situations which are evaluated as potentially harmful uncontrollable exceeding our resources for coping.⁶ There is no age at which we are exempt from stress.⁷ As a person chronically ages, an individual gradually or suddenly loses his physical capabilities, physiological resources of body functions, occupations, friends, and spouse

and may be independence. Those all keep on occurring continuously in the life of an old person.

These situational stressors become part of life of geriatric population when become too severe and numerous they may affect the physical and psychic equilibrium producing mental and physical symptoms.^{8,9}

In Nepal, socio cultural aspects of the family has been the main center for caring and rearing each member of the family from the stage of innocence to the old age. The family relationship and tie is very strong glue which holds for family productivity and shares joy and other emotions equally.¹⁰ But in recent days this trends and bonding weakened and people do not find time to realize the importance of rapport especially with older people, who are considered as burden in the family. Interactions become mechanical, and seldom there is sharing of experiences, joy and sorrow among family members. As a result they become hopeless and helpless and suffer from various types of psychological and physical problems by which overall quality of life is impaired. As a result elderly population experiences more stress and feel hopeless and helpless to deal with problems. In addition day to day stressors, cumulative stressors in one's life also play major role in increasing the severity of stress and they find difficulty in coping. It is commonly accepted that an underlying stress issue causes over 60 % of all visits to medical doctor.¹¹

Stress in any form can significantly alter the cardiovascular functions. Sudden emotional stress can also result in severe but reversible heart muscles weakness that mimics classical heart attack. Stress cardiomyopathy occurs when people suffer from long term stress. Besides this ageing process is accompanied by physical and mental frailty producing an elevated risk of physical and psychological stress in the old age and we know that old age itself is a condition where one has to face different levels of stress.¹²

Often stress is unnoticed and ignored not only by the family members but also by the health care professional. So some baseline data about the stress level among geriatric population would be of much help, which would guide in planning and setting strategies to improve the quality of life of geriatric population to make their life more enjoyable and productive. So this study was conducted with an aim of identifying stress level among elderly population, which is day by day increasing.

MATERIALS AND METHODS

The cross sectional study was conducted in the year 2005 A.D, among the geriatrics people living in an urban area of Dharan (Eastern Nepal) municipality. Dharan municipality has total 19 electoral wards with the population 95332 according to 2001 census. In Dharan 3.85% of the total population is above 65 years of age.¹³ About 180 people in the geriatric age group were residing in this ward.¹⁴

A door step survey was carried in ward 19 of urban area of Dharan. One hundred subjects in the age group of 65 identified who were willing to participate and details noted in performa. However, those who were sick, both physically and/or psychologically and were unable to communicate were excluded from the study.

The research instrument was constructed with the help of the subject expert (psychologist) and by reviewing relevant literature. The questionnaire consisted of two parts: Part A and Part B. Part A contained demographic data and Part B contained questions related to stress. In part B there were total of 25 questions with three different areas. These were psychological stress (13 items), socioeconomic stress (3 items) and physical stress (9 items) as developed here. Each question had four possible responses based on their perceptions and scoring for each question ranged from 0-3. For example no stress: 0, mild stress: 1, moderate stress: 2, severe stress: 3. Therefore, the maximum and minimum obtainable score were 75 and 0 respectively. Scoring was based on the response of the participants. Total scoring was added and classified as no stress: 0, mild stress: 1-25, moderate stress: 26-50 and severe stress: 51-75.

Instrument was translated in Nepali language. Pretesting of the instrument was conducted among 10 % of sample size in separate electoral ward to determine whether the

instrument was useful in generating the desired information and to ensure whether clearly worded or not.

The study was conducted after approval of research proposals from the research committee of College of Nursing of B.P Koirala Institute of Health Sciences. Investigators visited the respondents' homes and identified the sample. Purpose of the study was explained and the verbal consent was obtained. Data was collected through structured interview schedule. Duration of interview was approximately 20 minutes. Every effort was made to develop trust and confidence with the subjects and the confidentiality was maintained.

SPSS software program (version 11) was used for data analysis. Simple descriptive statistics like frequency, and percentage, was used for analyzing the demographic variables and stress level. Chi square test was used to find the association between stress level and demographic variables. In all the inferential statistical procedures, *p* value of 0.05 was considered statistically significant. For Chi square analysis moderate and severe stress were combined to find out the association between stress level and other demographic variables.

RESULTS

The study results shows (Table-1) that 67% of the geriatric people belong to age group 65-75 years, 61% of the total subjects were females, 51% were married, 75% of the elderly were illiterate, 69% were housewives, 77% belonged to extended family, 65% had no personal income, and 63% were totally dependent on others for financial matters. Table-2 indicates that no one is free from stress and they experienced different level of stress (mild - 40%, moderate-51%, severe-9%). The study found that there is an association between stress level and variables such as age, education, personal income and status of financial dependence Table-3.

DISCUSSION

Out of 100 respondents (Table-1) enrolled 67% belonged to the age group 65 - 75 years and thirty three (33 %) were from 75 years that corresponds to the Dharan's geriatric population that is 66.1% and 33.9% respectively.¹⁴ Sixty one percent respondents were females and 39% were male which is in contradiction to the population of this age group in ward number 19 where there are 51. 9% male and 48.08 % female.¹⁴

This difference between population and sample might have occurred most probably due to the unavailability of males during day time. Out of hundred respondents 47% belong to ethnic group Rai and 30% from Limbu as these constitutes the major population of Dharan. About seventy five respondents' (75%) were uneducated, which indicates

Table-1: Demographic Characteristics of the Respondents’

N=100

Demographic Characteristics	(%)
Age (years)	
65-75	67
75 -85	28
85 and above	5
Sex	
Male	39
Female	61
Ethnic group	
Brahmin/Chettri	6
Rai	47
Limbu	30
Tamang	6
Others	11
Marital status	
Married	51
Widowed	48
Living alone	1
Religion	
Hindu	46
Kirat	39
Buddhist/Christian	15
Muslim	0
Education Level	
Illiterate	75
Literate	
Primary	21
Secondary and above	4
Occupation	
Retired army	17
Agriculture	14
Housewives	69
Self-employed in business	0
Type of Family	
Extended	77
Nuclear	13
Joint	10
Income per month	
Personal income	
No	64
Yes	36
Status of financial dependence	
Totally dependent	63
Partially independent	8
Independent	29

Table-2: Stress level among geriatric population living in an urban area of Dharan

N=100

Stress	Stress Level				Total (Frequency)
	No Stress	Mild Stress	Moderate Stress	Severe Stress	
Physical	0	47	48	5	100
Psychological	2	27	59	12	100
Socioeconomic	20	39	35	6	100
Overall	0	40	51	9	100

the lower literacy rate of the country’s population especially that of elderly population. Regarding personal income out of 100 respondents 64% had no income, 63% were totally dependent on others for financial purposes. This reflects the poor economic status of the country because of which, it is difficult for the older people to meet even basic needs. This may be an additional factor which may be associated with stress level and other associated problems.

When the stress level was assessed for different areas it was interesting to note that only 20% participants were free from socioeconomic stress and 2% were free from psychological stress whereas none of them were free from physical stress. This reflects that, when the people are financially independent, they may be able to meet their basic needs effectively because of which the overall stress level is lowered. At the same time, once the individual becomes old even when they are economically sound, they still suffer from stress in other areas which may be due to poor physical and mental health status of the individuals in spite of their sound economic status.

The study findings showed that there is an association between level of stress and the age of the individual ($p < 0.05$). Severity of the stress was among sample aged 75 years and above than persons below 75 years of age. This is in accordance with the statement given by Campbell, which states that aging causes stress. As a person chronologically ages, there are more responsibilities and situational stressors.¹¹ The findings revealed that 49 (65.3%) respondent in the illiterate groups had moderate to severe stress as compare to ten (40 %) in literate group. The findings are consistent with the study conducted by Winston-Salem, N.C. He reported that less educated people have more severe financial stress and has a larger impact on their health.¹⁵ The findings is also supported by several editors stated that less educated people have more severe stress. When elderly are educated they tend to be somewhat better off financially as well as being better able to cope with sweeping social changes around them .So they can overcome even the severe level of stress.¹⁶ The study findings revealed that there is association between personal income and level of stress (<0.05). Forty five respondents (70.3%) out of 64 with no personal income had moderate to severe stress whereas only 14 out of 36 (38.9%) respondents with personal income had similar level of stress. This findings support the study conducted by Wright and Steptoe which showed higher socioeconomic position protected against stress related diseases which is evident in old age.¹⁷ Another study by Brown from university of North Carolina found that socioeconomic position had a significant role in chronic stress and chronic stress had a significant effect on health.¹⁸ The researcher also found that status of financial dependence had a significant association with the level of stress ($p<0.01$). Those who were totally

and partially dependent on others in financial matters are outnumbered in experiencing moderate to severe stress 47 (66.2%) than those who were independent 19 (37.9%). This is also supported by statement given by several researchers that financial problems were associated with the greatest risk of common mental disorder.¹⁹ It is also in agreement with the statement given by the Desjaralis *et al* that as the income changes occur they act as stressors. The elderly lose respect and care and in the extreme face isolation or abandonment. Economic upheaval can bring benefits to the elderly in terms of status and material wellbeing if they have any form of pension or guaranteed income.¹⁶

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Table-3: Distribution of stress level with different demographic variables

N=100

Demographic Variables	Level of stress		p z value
	Mild no. (%)	Moderate to Severe stress no. (%)	
Age (years)			
75 and above	8 (24.3)	25 (75.7)	< 0.05*
below 75	33 (49.3)	34 (50.7)	
Sex			
Male	19 (48.7)	20 (51.3)	> 0.05
Female	22 (36.1)	39 (63.9)	
Religion			
Hindu	19 (41.3)	27 (58.7)	> 0.05
Kirat	15 (38.5)	24 (61.5)	
Buddhist and Christian	7 (46.7)	8 (53.3)	
Marital status			
Married and living with spouse	22 (43.1)	29 (56.9)	> 0.05
Widowed and divorced	19 (38.8)	30 (61.2)	
Educational status			
Illiterate	26 (34.7)	49 (65.3)	< 0.05*
Literate	15 (60.0)	10 (40.0)	
Type of family [#]			
Nuclear and living alone	4 (30.8)	9 (69.2)	> 0.05
Joint and extended	37 (42.5)	50 (57.5)	
Personal Income			
No	19(29.7)	45(70.3)	< 0.05*
Yes	22(61.1)	14(38.9)	
Status of financial dependence			
Totally and partially dependent	24 (33.8)	47 (66.2)	< 0.01*
Independent	18 (62.1)	11 (37.9)	

Yate's corrected value

* significant association

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REFERENCES

- Prakash R, Choudhary SK, Singh US. A study of morbidity pattern among geriatric population living in an urban area of Udayapur. *Indian J Com Med* 2004; 29: 35-6.
- Davies AM. Ageing and health in the 21st century: an overview. In WHO, editor. Ageing and Health. WHO Kobe Center 1998: 24.
- Mathur J.S. Preventive and Social Medicine (1st ed.). New Delhi, India: CBS Publishers 2007: 404.
- Singh ML. Elderly. In Population Monogram of Nepal. Ramshahpath Kathmandu: Central Bureau of Statistics 2003.
- Population Projections for Nepal 2001-2002. Singhadarbar, Kathmandu: Central Bureau of Statistics 2003; 8: 20.
- Morgan TC, King RA, Weisz JR, Schopler J, editors. Introduction to Psychology. (7th ed.). New Delhi: TATA McGRAW-Hill 1997: 321.
- Schultz CM, Schultz TJ. The Effects of Age on Stress Levels and Its Affect on Overall Performance [home page on the Internet].c 2003 [updated 2003 ; cited 2005 Jan 20]. Available from: <http://aabss.org/journal>
- Agrawal N, Jhingan HP. Life events and depression in elderly. *Indian J Psychiatr* 2002; 44: 35-40.
- Goldman R. Mind over matter: Anti-Stress tips for anti-ageing, Total Health; 1997; 19: 26-7.
- Basnet S, Sharma S. Ageing problems two sides of a coin a report of focus group discussion and experience sharing. Health promotion and recreation center for aged women (HPRCAW). 2003: 4-6.
- Occupational ill health age statics: information sheet. 2003 [cited 2004 Dec 10]. Available from www.hse.gov.uk/statistics/2004/agefact.htm
- Parker R. Severe emotional stress can release chemicals that mimic heart attack. [homepage on the Internet]. 2005 [cited 2005 March 3] Available from: <http://www.futurepundit.com/archieves/catbrainemotions.html>
- Central Bureau of Statistics in Collaboration with UNFPA. Population of Nepal 2002. Ramshahpath, Thapathali, Kathmandu: CBS; 2002.
- Voter's list. Nirvachan Ayog, Kantipath, Kathmandu 2060 B.S.[Unpublished raw data]
- Salem-Winston NC. Less educative people will have lower stress, but more health effects [homepage on the internet]. 2004 [cited 2005 Jan 10] . Available from: www.sciencedaily.com
- Desjarlis R, Eisenberg L, Good B, Kleinman, A. The elderly. In World Mental Health Problems and Priorities in Low Income Countries. New York: Oxford University Press, 1995: 207-13.
- Wright CE and Steptoe A. Subjective socioeconomic position, gender and cortisol responses to waking in an elderly population. *Psychoneuroendocrinol* 2005; 30: 582-90.
- Brown DJ. Everyday life for black American adults: stress, emotions and blood pressure. *Western J Nursing Res* 2004; 26: 499-514.
- Lopes CS, Faerstein E, Chor D. Stressful life events and common mental disorders: result of the Pro-Saude study. *Cad Saude Publica* 2003; 19: 1713-20.