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Assess the Level of Perceived Stress among Geriatic Patients with Hypertension

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Abstract: A descriptive study was conducted in the non-communicable diseases OPD of the Government Head Quarters Hospital, Cuddalore district, Tamilnadu to assess the level of perceived stress among the geriatric patients with hypertension. A total of 110 geriatric patients with hypertension who met inclusion criteria were selected by using the convenient sampling technique. The level of perceived stress of the geriatric patients with hypertension was assessed by using the Perceived Stress Scale (PSS). The result showed that 67.3% of the geriatric patients with hypertension had moderate perceived stress and 25.4% of geriatric patients had high levels of perceived stress. Ordinal measurement Gamma value and Chi-Square was applied. Gamma value showed a significant relationship between the geriatric patients' perceived stress with age and education at 0.016 and 0.001 respectively. Chi-Square value showed a significant relationship between geriatric patients' perceived stress with gender, marital status, income and treatment compliance at P=0. 001, P=0. 002 and P=0. 021 respectively.
This implies that the perceived stress is common among geriatric patients with hypertension. Early detection andpropercounselingshould be conducted for the geriatric patients with hypertension in the non-communicable diseases OPD and in the inpatient departments will reduce the perceived stress among the geriatric patients with hypertension.
Keyw0rds: Hypertension, Perceived stress, Geriatric patients

I. INTRODUCTION

Ageing is a universal process. Escalating health problems in the world necessitate health professionals and researchers to investigate the factors responsible for the development of different diseases in human beings, and one of them includes hypertension. About one billion people are suffering from hypertension globally and the prevalence rate will increase up to 1.56 billion by 2025.[2] It is reported that consistent high blood pressure is damaging the health of almost 25% of youngsters of both sexes.[1] The alarming point is that more than 50% hypertensive patients do not even know that they are suffering from it.[2]

According to the census 2001, the population of the geriatrics (age 60 years and above) in India was 75.9 million, i.e. 7.4% of the total population. It is projected to be 113 million, i.e. 8.9% of the total population by the year 2016.[3] The elderly, by themselves, are a vulnerable group and non-communicable diseases (NCDs) are clearly a major morbidity in this age group. In India, NCDs were responsible for 53% of deaths and 44% of disability adjusted life years lost. Developing countries, like India, are likely to face an enormous burden of NCDs in future and of these diseases, hypertension is one of the most important treatable causes of mortality and morbidity in the elderly population.[4]

Hypertension in the elderly is associated with increased occurrence rates of sodium sensitivity, isolated systolic hypertension, and 'white coat effect'. Arterial stiffness and endothelial dysfunction also increase with age. Biological, social and psychological factors are often considered as significant risks of hypertension. The psychological state of an individual greatly affects the physical condition of the human body. Empirical evidence reports high incidence of depression, anxiety and stress among patients with hypertension.[6] Stress has been considered an important factor in the etiology of hypertension. Stress is known to be significantly correlated with hypertension and causes many cardiac problems. The natural reaction of the cardiovascular response to stress is the increase in heart rate. Young adults who have a greater blood pressure response to stress may be at risk for hypertension as they are growing up.[7]

A. Statement of the Problem
Assess the level of perceived stress among geriatric patients with hypertension.

II. OBJECTIVES OF THE STUDY

A. To assess the level of perceived stress among geriatric elderly patients with hypertension.

B. To find an association between the levels of perceived stress among geriatric patients with hypertension and their demographic variables (age, gender, residence, marital status, education, occupation, income, number of children and types of family) and health profile (duration of current illness, previous hospitalization experience and treatment compliance).

III. METHODOLODY

A. Research Design
A descriptive, non experimental design.
1) *Setting :* This study was conducted in non-communicable diseases OPD of the Government Head Quarters Hospital, Cuddalore district, Tamilnadu.
2) *Population :* Geriatric patients aged 60 years and above with hypertension
3) *Sampling Technique :* Non-probability convenient sampling technique was used to select subjects for this study.
4) *Sample Size :* A total sample of 110 male and female geriatric patients with hypertension who met the inclusion criteria were selected using the convenient sampling technique.
5) *Criteria for Sample Selection*

B. Inclusion Criteria
Geriatric patients with hypertension who had been attending non-communicable diseases OPD of the Government Head Quarters Hospital, Cuddalore district, Tamilnadu.
1) Geriatric patients with hypertension at the age 60 years and above.
2) Geriatric patients with hypertension who were willing to participate in the study.
3) Geriatric patients with hypertension who were able to communicate in Tamil.

C. Exclusion Criteria
1) Geriatric patients with hypertension below the age of 60.
2) Mentally ill geriatric patients with hypertension.
3) Geriatric patients with hypertension who were having hearing problems.
4) Geriatric patients with complications due to hypertension.

D. Description of the Data Collection Instrument
The tool used for collection of data was an interview guide. It consisted of three parts:
Part I: Demographic data
Part II: Health profile
Part III: Cohen's Perceived Stress Scale (PSS) to assess the perceived level of stress among geriatric patients with hypertension.
1) *Part I:*This part of the instrument consisted of an interview guide on demographic variables such as age, gender, residence, marital status, education, occupation, income, number of children and type of family.
2) *Part II:*Health profile consisted of duration of illness, medication history, previous hospital experience, treatment compliance and their habits.
3) *Part III:*The perceived level of stress of geriatric patients with hypertension was assessed using the Cohen's Perceived Stress Scale (PSS). It is a standardized tool consists of 5 positive and 5 negative items. The total score was 40. The stress level is classified as low, moderate and very high stress. Each item is rated on a 5- point scale ranging from never (0) to almost always (4). Positively worded items are reverse scored, and the ratings are summed, with higher scores indicating more perceived stress, For example, 0=4, 1=3, 2=2, etc. and then summing across all 10 items. Items 4. 5, 7, and 8 are the positively stated items.

E. Score Iterpretation

Sl.No	Level of Perceived Stress	Score
1	Low stress	0-13
2	Moderate stress	14-26
3	Very high stress	27-40

F. Data Collection Procedure

The main study was conducted between 02.11.2015 and 18.12.2015 in the non-communicable diseases OPD of the Government Head Quarters Hospital, Cuddalore district, Tamilnadu. Permission was obtained from the Joint Director of above mentioned hospital. A hundred and ten geriatric patients with hypertension who met the inclusion criteria were selected by using the convenient sampling technique. Informed consent was obtained from the each patient. The investigator established good rapport with the patients by an informal talk. The purpose of the study was explained to the patients to ensure their cooperation. The structured interview was conducted by the investigator. Five patients were selected per day. The perceived stress levels of geriatric patients with hypertension were assessed using the Perceived Stress Scale. The time spent for each sample was 20 minutes.

G. Analysis and Findings

The data collected were grouped and analyzed by using descriptive and inferential statistical methods. Tables and figures were used to explain the demographic variables of the geriatric with hypertension and their level of perceived stress.

Table 1: Distribution Demographic Characteristics of Geriatric Patients with Hypertension.

S.No	Demographic variables		Number	%
1	Age	60-65 years n = 110	47	42.7
		66-70 years	24	21.8
		71-75 years	20	18.2
		Above 75 years	19	17.3
2	Gender	Male	68	61.8
		Female	42	38.2
3	Residence	Rural	84	76.4
		Urban	26	23.6
4	Religion	Hindu	99	90
		Christian	3	2.7
		Muslim	8	7.3
		Others	-	-
5	Marital Status	Married	80	72.7
		Unmarried	3	2.7
		Widow / Widower	27	24.5
		Divorced / Separated	-	-
6	Educational status	Non literate	47	42.7
		Primary school	30	27.3
		Middle school	11	10
		High school	7	6.4
		Higher secondary	11	10
		Graduate	4	3.6
7	Occupation	Farmer	28	25.5
		Coolie	27	24.5
		Housewife	24	21.8
		Unemployed	10	9.1
		Retirement	15	13.6
		Others	6	5.5
8	Income per month	Below Rs 5000	76	69.1
		Rs. 5001 – Rs. 7000	18	16.4
		Above Rs.7000	16	14.5
9	Number of Children	Nil	3	2.7
		One	2	1.8

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		Two	14	12.7
		Three	48	43.6
		Above three	43	39.1
10	Type of Family	Nuclear Family	57	51.8
		Joint Family	53	48.2

Table 1 shows the percentage of distribution of demographic characteristics of geriatric patients with hypertension. With regard to age, most of the patients (42.7%) belonged to age group of 60-65 years. Sixty eight (61.8%) were males and 42 (38.2%) were females. The majority of the geriatric patients 76.4% belonged to the rural region and only 26 (23.6%) belonged to the urban region. Ninety nine (90%) were Hindus. With regard to marital status of the geriatric, 80 (72.7%) were married. Non literates were around 42.7% and four (3.6%) had completed graduation. Seventy six (69.1%) had monthly income of below Rs. 5000 and 16 (14.5%) had above Rs.7000 per month. The majority of the geriatric patients (43.6%) had three children, 39.1% of them had more than three children and 3 (2.7%) had no child. With regard to the occupation of the elderly patients 28 (25.5%) were farmers, 10 (9.1%) were unemployed and 15 (13.6%) were retired persons. The majority of them (51.8%) belonged to joint family.

Table 2: Distribution of Health Profile of Geriatric Patients with Hypertension.

n= 110

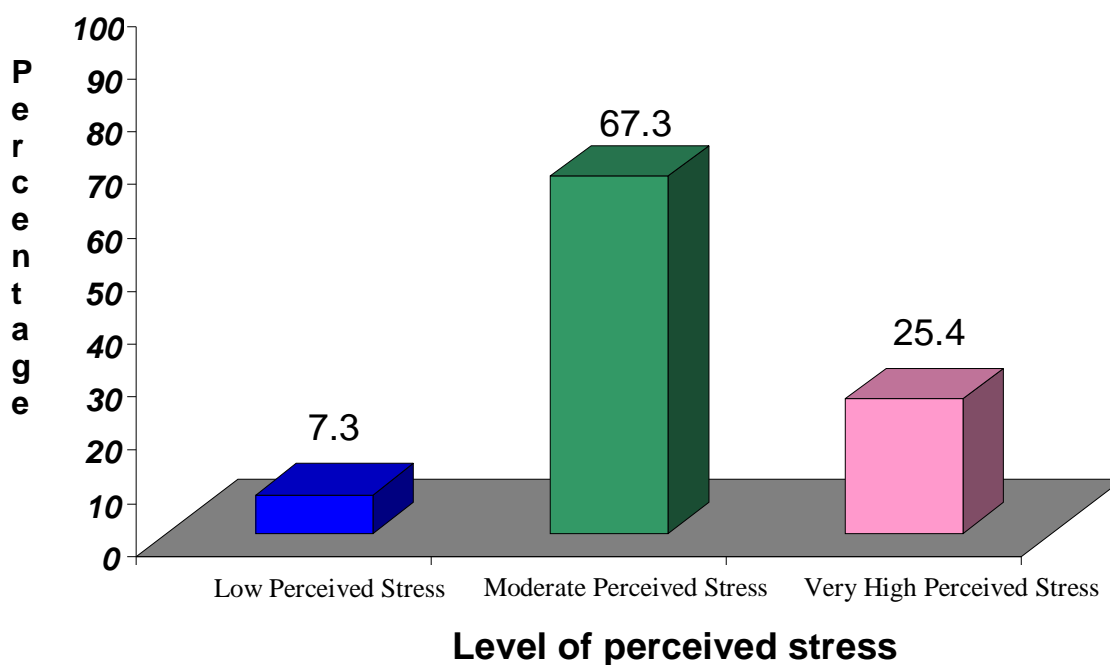| S.No	Health Profile		Number	%
1	Onset of disease	Below 30 years	1	0.9
		Above 30 years	109	99.1
2	Duration of disease	1-5 years	74	67.3
		Above 5 years	36	32.7
3	Previous history of hospitalization	Yes	57	51.8
		No	53	48.2
4	History of drug intake	When health problem arises	9	8.2
		As prescribed by a doctor	101	91.8
5	Treatment compliance	Periodically, as advised by doctors	50	45.5
		When health problem arises	51	46.4
		When time permits	9	8.2
6	History of any harmful habits	Alcohol intake	2	1.8
		Smoking	31	28.2
		Both alcohol intake and smoking	11	10
		Tobacco chewing	27	24.5
		None of the above	39	35.5

Table 2 shows the percentage of distribution of health profile of geriatric patients with hypertension. The majority of the patients 109 (99.1%) had onset of disease after 30 years of their age and one (0.9%) had before 30 years. Seventy four (67.3%) of them had duration of disease between 1 to 5 years and 36 (32.7%) had above 5 years of duration. Fifty seven (51.8%) of the geriatric patients had previous hospitalization and 53 (48.2%) had no previous hospitalization. The majority of them (91.8%) was taking drugs regularly as advised by doctors and 9 (8.2%) were taking drugs when health problems arise. Fifty (45.5%) geriatric patients had treatment compliance as advised by doctors, 51 (46.4%) had when health problem arise and 9 (8.2%) had when time permits. Two patients had a history of alcohol intake, 31 (28.2%) had a smoking habit, 11 (10%) had both alcohol intake and smoking, 27 (24.5%) had tobacco chewing and 39(35.5%) had no harmful habits.

Table 3: Distribution of Level of Perceived Stress among Geriatric Patients with Hypertension.

Level of perceived stress	Number	%
Low stress	8	7.3
Moderate stress	74	67.3
Very high stress	28	25.4

n = 110

Table 3 shows that the distribution of level of perceived stress among geriatric patients with hypertension. A majority of (67.3%) geriatric patients had a moderate level of perceived stress and 25.4% of patients had a very high level of perceived stress. The results are represented in figure 1.

Figure 1: Percentage Distribution of Level of Perceived Stress among Geriatric Patients with Hypertension.

Table 4: Distribution of Level of Perceived Stress among Geriatric Patients with Hypertension in relation to their Demographic Variables.

n=110

Variables		Low perceived stress		Moderate perceived stress		Very high perceived stress		Value
		No	%	No	%	No	%	
1.Age (Years)	60-65	8	17.0	32	68.1	7	14.9	Gamma value 0.016*
	66-70	2	8.3	14	58.3	8	33.3	
	71-75	1	5.0	11	55.0	8	40.0	

	> 75	1	5.3	13	68.4	5	26.3	
2.Gender	Male	11	16.2	47	69.1	10	14.7	χ^2 13.454 (P=0.001)[*]
	Female	1	2.4	23	54.8	18	42.9	
3.Residence	Rural	10	11.9	49	58.3	25	29.8	χ^2 4.484 (P=0.106) NS
	Urban	2	7.7	21	80.8	3	11.5	
4.Marital status	Married	11	13.8	54	67.5	15	18.8	χ^2 3.038 (P=0.018)*
	Unmarried / Widow	1	3.3	16	53.3	13	43.3	
5.Education	Non literate	3	6.4	27	57.4	17	36.2	Gamma value 0.001[*]
	Primary school	3	10.0	19	63.3	8	26.7	
	Middle & High School	3	16.7	12	66.7	3	16.7	
	HSS & Graduate	3	20.0	12	80.0	-	-	
6.Occupation	Farmer	4	14.3	16	57.1	8	28.6	χ^2 14.545 (P=0.150) NS
	Coolie	1	3.7	15	55.6	11	40.7	
	Housewife	2	8.3	15	62.5	7	29.2	
	Unemployed	2	20.0	7	70.0	1	10.0	
	Retired	1	6.7	13	86.7	1	6.7	
	Other works	2	33.3	4	66.7	-	-	
7.Income	< Rs.5000	6	7.9	44	57.9	26	34.2	χ^2 16.548 (P=0.002)[*]
	Rs. 5001 – Rs. 7000	1	5.6	15	83.3	2	11.1	
	> Rs. 7000	5	31.3	11	68.8	-	-	
8.Number of Children	No child	1	33.3	2	66.7	-	-	χ^2 7.623 (P=0.267) NS
	One-two children	-	-	12	75.0	4	25.0	
	Three children	8	16.7	30	62.5	10	20.8	
	Above three children	3	7.0	26	60.5	14	32.6	
9.Family type	Nuclear	3	5.3	36	63.2	18	31.6	χ^2 5.204 (P=0.074) NS
	Joint	9	17.0	34	64.2	10	18.9	

Table 4 shows that age increases, the perceived stress level also increases. According to Gamma value, the result was statistically significant. 69.1% of male geriatric patients had a moderate level of perceived stress when compared to female, 54.8% and 42.9% of

female geriatric patients had a very high level of perceived stress when compared to male (14.7%). This difference was statistically significant. 67.5 % of married geriatric patients had a moderate level of perceived stress and 43.3% of geriatric patients, those belonged to Unmarried / widow category had a very high level of perceived stress. As per chi-square, level of perceived stress of the geriatric patients and their marital status was statistically significant. With regards to education, 36.2% of non literate geriatric patients had a very high level of perceived stress. As per Gamma value, this result was statistically significant. There were no significant relation between levels of perceived stress and their residence, occupation number of children and family type.

Table 5: Distribution of Level of Perceived Stress among Geriatric Patients with Hypertension in relation to their Health Profile.

Tables 5 revealed that 55.6% of geriatric patients with irregular treatment had a very high level of perceived stress when compared to geriatric patients (12%) with regular treatment. Chi-square was applied. The result indicated that there was a significant relation between perceived stress level and their treatment compliance. There were no significant relation between levels of perceived stress and their health profile such as duration of current illness and history of previous hospitalization.

IV. RESULTS

The result showed that 67.3% of geriatric patients with hypertension had a moderate level of perceived stress and 25.4% of geriatric patients had a very high level of perceived stress. Ordinal measurement Gamma value and Chi-Square was applied. Gamma value showed a significant relationship between geriatric perceived stress with age and education at 0.016 and 0.001 respectively. Chi-Square value showed a significant relationship between geriatric perceived stress with gender, marital status, income and treatment compliance at P=0. 001, P=0. 002 and P=0. 021 respectively.

This implies that the perceived stress is common among geriatric patients with hypertension. Early detection and proper counseling should be conducted for the geriatric patients with hypertension in the non-communicable diseases OPD and in the inpatient departments will reduce the level of perceived stress among the geriatric patients with hypertension.

V. DISCUSSION

A descriptive study was conducted in the non-communicable diseases OPD of the Government Head Quarters Hospital, Cuddalore district, Tamilnadu to assess the level of perceived stress among geriatric patients with hypertension. The study findings showed that a majority of (67.3%) geriatric patients had a moderate level of perceived stress and 25.4% of patients had a very high level of perceived stress. This result was similar to the findings of following studies:

Madhumitha et al (2014) study findings revealed a highly significant association between stress and hypertension.[8]

Rani, Kumari, Indira and Kantha (2016) found that 3 (3%) of the elderly had mild stress, 86 (86%) had moderate stress and 11 (11%) had severe stress.[9]

Panigrahi et al, (2015) found that the overall stress mean score was 60.6% among senior citizen.[10]

VI. CONCLUSION

Stress is a prevalent disorder among geriatric patients with hypertension. It may decrease quality of life, and increase medical costs and health care utilization. Early recognition and stress reduction of stress is important because patients may slip into a downward trend. The study showed that the demographic variables like age, gender, marital status, education, income and health profile like treatment compliance had increased the level of stress among geriatric patients with hypertension.

VII. RECOMMENDATIONS

A. The Nursing and Medical students should be given training regarding geriatric care. It helps them to understand the physiological, psychological, socio-cultural aspects of geriatric care.

B.   Regular counselling for geriatric patients should be conducted at outpatient as well as in the inpatient department by health care personnel.

C. Geriatric patients' stress should be assessed regularly at non-communicable diseases OPD and other areas.

D. Stress reduction programme should be conducted at the hospitals.

E. A similar study can be conducted with a larger sample size to confirm the result of the study.

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