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A STUDY ON CAREGIVER STRESS AND ASSOCIATED FACTORS AMONG INFORMAL CAREGIVERS OF ELDERLY PEOPLE

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ABSTRACT: Introduction: Demographic trends have shown an increase in geriatric population. On growing older, they will become dependent on family or informal caregivers. Caregiver stress is experienced when chronic life strains and coping mechanisms challenge the capacity of an informal caregiver. **Objective:** The study is aimed to assess the caregiver stress and associated factors among informal caregivers. **Methodology:** The study was conducted among 180 subjects in Padianallur area. Multistage sampling method was done. Study tool comprised of questionnaire on Sociodemographic details, co-morbid conditions, Barthel index and caregiver stress scale. **Statistics:** Data were exported to SPSS version 16 and analysed. **Results:** Female Caregivers accompanying the elderly patients were highly stressed than males (48%, 29%, p=0.037). Caregivers in the age group of 60 years and above were experiencing high level of stress (61.1%, p=0.001). Caregivers of care recipients aged 70 years and above were highly stressed (62%, p=0.002). Care providers with co – morbid conditions were suffering high level of stress (60.2%, p< 0.001). Caregivers of severely to total dependent recipients were highly stressed (75%, p = 0.001). **Conclusion:** Well-being of care recipients depends upon the well-being of caregivers. The role of non-communicable Diseases (NCD) clinics should be widened to provide health care services like screening and counselling amenities for caregivers. NCD clinics should educate caregivers about the basic elements of geriatric care that can be rendered at the domiciliary level. Arrangement of Day care centres will lessen the burden laid on caregivers.

INTRODUCTION: The healthcare system has made significant progress in combating both mortality and morbidity. Consequently, the elderly population has grown due to increased life expectancy [1].

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Factors such as education, financial status, gender, and place of residence contribute to the growing vulnerability of this population [2]. Conversely, the proportion of productive and younger individuals is declining. It is an inevitable consequence of demographic transition.

As a result of increasing elderly population, the implementation of social, economic, and healthcare Policies is encountering numerous challenges [2]. Despite their vulnerability, older adults often receive insufficient attention. As they grow older,

elderly individuals become increasingly dependent in performing activities of daily living. Care for older adults may be provided by a family member, friend, neighbour, relative, or a paid caregiver. A formal caregiver is a trained professional who provides care to vulnerable individuals, including the elderly. In contrast, a family caregiver usually a relative delivers care without compensation and is commonly referred to as an informal caregiver, as they often lack formal training.

Caregiver stress, or burden, occurs when life events, chronic stressors, personal beliefs, and coping strategies combine to create conditions that hinder a person's ability to adapt to the care giving role [3]. Traditionally, families have been regarded as the primary source of care for elderly individuals Whether they are ill, disabled or not [4]. Elderly care recipients and informal caregivers often share a close, personal bond. Informal care giving can be both a burden and a source of fulfilment [5].

Caregiver stress is aggravated by poor physical and mental health, as well as financial strain [6]. The primary objective of this study is to identify factors associated with caregiver stress. The study findings may propose family to community-based interventions to support caregivers.

METHODOLOGY:

Study Design: Community based cross sectional study

Study Place: Area under the jurisdiction of Padianallur primary health centre

Study Population: The study population was chosen from among informal caregivers of elderly individuals (60 years of age and older). Eligible caregivers were interviewed following an explanation of the study's objectives and obtaining informed consent.

Inclusion Criteria for Caregiver: Any person mostly but not necessarily related to the aged care recipient who has been spending at least eight hours a day for at least three months and neither formally trained nor paid.

Sampling: Sample size, Based upon research conducted in Finland, sample size was calculated as 180 (formula - N = Z(1-α/2)2pq/d2, prevalence (P) = 38%, relative precision (d) = 20%, i.e.7.6%)at 95% confidence interval and 10% non- response rate [3].

Sampling Method: Sampling was done by multistage sampling method. Simple random sampling was done at initial stages and probability proportional to size sampling was done and To select participants from 4 sub centres namely Padianallur -1, Padianallur – 2, Padianallur – 3 and Siriniyam **Fig. 1.**

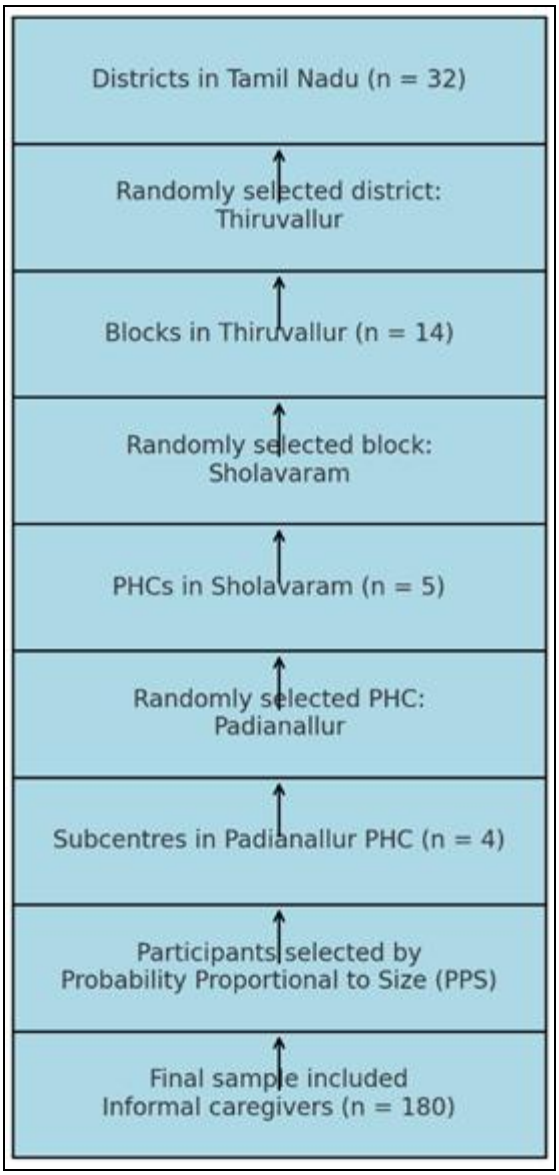

FIG. 1: PRISMA FLOW CHART OF SAMPLING SEQUENCE

Study Tool: Study tool has 2 parts: A pretested validated, semi-structured questionnaire, and Caregiver Stress Scale (CSS).

Pretested validated, semi-structured questionnaire has following sections:

A. Caregiver and care recipient's socio - demographic profile.

B. Details of care giving.

C. Co – morbid status - caregiver and care recipient.

D. *Barthel index*– assessment of "activities of daily living (ADL)" of care recipients.

It scales from 0 to 100. A care recipient is said to be totally dependent when his/her score ranges between 0 and 20. If the score ranges between 21 and 60, the care seeker will be considered to be severely dependent. Care receiving elderly people will be treated as moderately dependent when he/she scores between 61 and 90. If the score lies between 91 and 99, the care recipient will be slightly dependent. The care recipient will be totally independent if his/her score is 100 [7].

Caregiver Stress Scale: Consisted of ten items regarding caregiver stress (where a response of yes = 1, No = 0). A respondent could get a maximum score of 10. Any response of a score of 5 and above was Considered as experiencing high stress [1].

Data Collection: The study was carried out after obtaining clearance from the Institutional Ethics Committee of Madras Medical College, Chennai.

Data Entry: The data were entered in Microsoft Excel 2010 version. The master chart was prepared and exported to Statistical Package for Software Solutions (SPSS) version 16 for statistical analysis.

Data Analysis: Continuous variables were presented in the form of descriptive statistics (mean, median and standard deviation) and categorical variables in the form of frequency distributions and percentages.

Association between the independent and dependent categorical variables was analysed using Chi square test. Spearman correlation analysis was done to examine the relationship between the continuous variables.

RESULTS: Among hundred and eighty (180) caregivers, 142 (79%) participants were female. Mean age of caregivers was 42.3 years. Care recipients were distributed equally in terms of gender. On an average, an informal caregiver in the current study spent 16 hours per day in providing care to the care recipient.

TABLE 1: DISTRIBUTION OF CAREGIVER STRESS

Mean +/- 2Standard deviation (SD)	3.98 +/- 5.2	
Median	4	
Level of stress among caregivers	Low stress 101 (56.1%)	High stress 79 (43.9%)

Among 180 caregivers, 79 of them were experiencing high level of caregiver stress.

Prevalence of High Stress among the Caregivers: 43.9% (36.6%-51.2%, 95% Confidence Interval) **Table 1.**

TABLE 2: CO – MORBID PROFILE OF CAREGIVERS AND CARE RECIPIENTS

Sl. no.	Co – morbid conditions	Caregiver(n)	Care recipient(n)
1	Type 2 diabetes mellitus	22	45
2	Essential hypertension	24	51
3	Cerebro vascular accident	3	11
4	Dementia	7	49
5	Depressive disorders	22	60
6	Behavioural problems	41	105
7	Sleep related disturbances	30	56
8.	Vision related problems	7	29
9.	Hearing problems	1	10
10.	Arthralgia and related problems	55	101
11	Others	13	20

TABLE 3: SOCIODEMOGRAPHIC& CLINICAL PROFILE OF CAREGIVER AND IT'S INFUENCE ONCAREGIVER STRESS

Variables	Low stress	High stress	Total	Chi square value	p value
Gender					
Male	27(71%)	11(29%)	38	4.367	0.037*

Female	74(52%)	68(48%)	142		
Gender influence					
Same gender	39(54.2%)	33(45.8%)	72	0.184	0.668
Opposite gender	62(57.4%)	46(42.6%)	108		
Age					
Less than 40 years	60 (70.6%)	25 (29.4%)	85	14.136	0.001*
40 to less than 60 years	27 (45.8%)	32 (54.2%)	59		
60 years & above	14(38.9%)	22(61.1%)	36		
Marital status					
Married living with spouse	82(57.3%)	61(42.7%)	143	4.462	0.114
unmarried	9(75%)	3(25%)	12		
Widow(er) / separated	10(40%)	15(60%)	25		
Educational status					
Up to middle schooling	46(46.9%)	52(53.1%)	98	7.349	0.007*
High school & above	55(67.1%)	27(32.9%)	82		
Occupational status					
Employed	47(58%)	34(42%)	81	0.219	0.640
Not employed	54(54.5%)	45(45.5%)	99		
Dwelling status					
Living with care recipient in the same residence	85(53.8%)	73(46.2%)	158	2.810	0.094
Others	16(72.7%)	6(27.3%)	22		
Duration of caregiving					
Less than 5 years	61(59.2%)	42(40.8%)	103	0.947	0.33
5 years and above	40(51.9%)	37(48.1%)	77		
Caregiver co –morbid status					
With no co – morbid conditions	64(73.6%)	23(26.4%)	87	20.826	<0.001*
With co – morbid conditions	37(39.8%)	56(60.2%)	93		

*Statistically significant at $p < 0.001$.

From the **Table 3** it was evident that gender ($p = 0.037$), age ($p = 0.001$), education ($p = 0.007$) and associated co-morbid conditions of caregivers were found to be statistically significant.

TABLE 4: SOCIODEMOGRAPHIC & CLINICAL PROFILE OF CARE RECIPIENTS AND IT'S INFUENCE ONCAREGIVER STRESS

Variables	Low stress	High stress	Total	Chi square value	p value
Gender					
Male	47(53%)	43(47%)	90	1.105	0.293
Female	54(60%)	36(40%)	90		
Age					
Age less than 70 years	82(63.1%)	48(36.9%)	130	9.221	0.002*
Age 70 years and above	19(38%)	31(62%)	50		
Educational status					
Up to middle schooling	81(55.1%)	66(44.9%)	147	0.332	0.565
High school & above	20(60.6%)	13(39.4%)	33		
Occupational status					
Employed	36(63.2%)	21(36.8%)	57	1.682	0.195
Not employed	65(52.8%)	58(47.2%)	123		
Co –morbid status					
With no co – morbid conditions	12(75%)	4(25%)	16	2.544	0.111
With co – morbid conditions	89(54.3%)	75(45.7%)	164		
ADL status					
Independent to slightly dependant	22(78.6%)	6(21.4%)	28	13.596	0.001*
Moderately dependant	74(56.1%)	58(43.9%)	132		
Severely to total dependant	5(25%)	15(75%)	20		

*Statistically significant at $p < 0.001$.

From the **Table 4**, it was evident that age (p = 0.002) and dependency status (p = 0.001) of care recipients were found to be statistically significant.

TABLE 5: CORRELATION BETWEEN VARIOUS VARIABLES AND CAREGIVER STRESS SCORE

Variable	Spearman's Correlation(r)	Strength of Linear relationship	p value
Age of caregiver	0.199	Very weak uphill (positive)	0.007*
Age of care recipient	0.164	Very weak uphill (positive)	0.028*
Family income	- 0.223	Weak downhill (negative)	0.003*
Duration of care giving	0.71	No relationship	0.346
Co – morbid conditions of caregiver	0.364	Weak uphill (positive)	<0.001*
Co – morbid conditions of caregiver	0.282	Weak uphill (positive)	<0.001*
ADL score of care recipient	- 0. 238	Weak negative (downhill)	0.001*

*Statistically significant at p < 0.001.

From the **Table 5**, it was obvious that all the above variables except the duration of care giving are correlated significantly with the caregiver stress score.

DISCUSSION: The objective of the study was to assess the level of stress experienced by informal caregivers of the elderly. It was found that 43.9% of caregivers experienced high stress (36.6% to 51.2% C.I.). Similar findings were explored in a study carried out in Finland, where 38% of caregivers reported having moderate to severe levels of stress or burden [3]. While the study conducted in Singapore found that 28% of people had stress, the prevalence of stress was shown to be as high as 63.9% in the Egyptian study [1, 8]. Factors such as gender, age, education, co-morbid conditions and dependent status of the care recipient varied amongst studies.

Female Gender more Prone to Develop Caregiver Stress: Of the female caregivers, 48% were under high stress, while only 29% of the male caregivers experienced the same and the difference was statistically significant (p=0.037). Similar results were found in studies carried out in Egypt and Singapore. However, there was no gender difference according to the Finnish study. Male caregivers in the Nigerian study reported higher levels of stress than their female counterparts. Women were expected and required to take on the role of homemaker in our sociocultural setting. It's possible that female caregivers were unable to talk to others about the challenges of providing care. This inequality can be attributed to gender role socialization [9].

Stress Level Rises as the Age Increases: The study revealed that both caregiver groups those between the ages of 40 and 60 and those over 60 were experiencing high levels of stress (54.2% and 66.1%, respectively). These findings have been found to be contradicting with the Nigerian study [10]. Caregivers' potential would decline as they grew older. As they grow older, they will become more reliant on other family members and turn into near-care seekers. Even simple caring duties would become more challenging on getting older. The caregivers accompanying the elderly patients of elderly adults 70 years of age and older reported significantly higher levels of stress (62%) than those caring for senior people under 70 years of age (39.9%), (p=0.002).

The Caregivers' Co-Morbid Disorders Increase Their Stress Levels: There was a significant difference in the amount of stress experienced by caregivers with at least one co-morbid condition (60.2%) compared to those without any co-morbid conditions (26.4%; p=0.001). It was clear that a caregiver with co-morbid conditions would be unable to provide care in an efficient manner. High levels of stress would have resulted from guilt feelings that arose from not fulfilling the duty of caretaker. In the study we conducted, there was no statistically significant association between stress and the co-morbid condition of care recipients. Stress among caregivers can have a number of detrimental effects, such as deteriorations in physical health, an increase in mental health issues, and a general drop in quality of life [11].

More the Severity of Care Recipient's Dependent Status Higher the Caregiver Stress Level: The caregivers of care recipients who were severely dependent experienced higher levels of stress than others.

The caregivers would experience higher stress if their ADL score was lower (spearman's coefficient of determination, r = -0.238, weak downward negative linear association between ADL score and caregiver stress). Similar findings were made in a study conducted in Singapore, which indicated that caregivers' stress levels increased with a lower ADL score (r = -0.275, p, 0.05). A close caregiver-care recipient relationship is associated with better activities of daily living [12]. In case of caregiver, while the education had an influence on stress, occupation and marital status were found to be insignificant. In case of care recipient, factors like education, occupation and co – morbid conditions were not associated with the caregiver stress.

CONCLUSION: It can be concluded that gender, age, co – morbid conditions and dependence for daily activities play a significant role in enhancing caregiver stress. Expanding the scope of non-communicable diseases (NCD) clinics to include screening and counselling services for caregivers is the need of an hour. The fundamentals of geriatric care that can be provided at the home level should be taught to caregivers in NCD clinics.

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CONFLICT OF INTEREST: Nil

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