

Caregiver burden in caregivers of elderly registered in Armed Forces Hospital and King Fahad Military Medical Complex Home Care Services in Dhahran

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ABSTRACT

Background: Worldwide, there is a dramatic shift in the distribution of population toward older ages. Family caregivers are playing a major role in keeping ongoing care for this age group. Moreover, they are saving tremendous costs on healthcare systems. Unfortunately, caregivers throughout their experience are facing difficulties, suffering and are subjected to “caregiver burden.” **Objectives:** To estimate the prevalence of caregiver burden and to identify its predictive factors. **Materials and Methods:** A cross-sectional descriptive study was conducted in two conveniently selected home care registered elderly in two military hospitals in the Eastern Province, Saudi Arabia. In a structured interview setting, a constructed questionnaire and Zarit Burden Interview were used to collect data from primary caregivers. **Results:** A total of 117 caregivers for functionally impaired elderly people were included in the study. The overall estimated prevalence was 65%. Furthermore, severe, moderate, and mild burden were 15%, 18%, and 30%, respectively. Longer duration of caregiving, unavailability of secondary caregiver, and female care recipient were positively associated with the burden. **Conclusions:** Results of the present study show a respectable prevalence of burden among Saudi caregivers. Effective counseling, education, and multidisciplinary support are needed for caregivers of an elderly population. Further studies are needed to explore the burnout among Saudi caregivers.


KEY WORDS: Caregiver Burden; Caregivers of Elderly; Saudi Arabia

INTRODUCTION

The rapid growth of elderly population is considered as a remarkable phenomenon that resulted from global decreasing fertility rates and the steady increase in life expectancy.^[1] In Kingdom of Saudi Arabia, the number of elderly aging 65 years or older was 810 thousand in 2010; it is estimated to increase and reach about 7 million by 2050.^[2] Providing care for the elderly is a great humanitarian mission as an

appreciation for their active role in the community during the years of their lives. Family caregivers are playing a major role in keeping ongoing care for this age group. Moreover, they are saving tremendous costs on healthcare systems.^[3] Unfortunately, caregivers throughout their experience are facing difficulties, suffering and are subjected to “caregiver burden” which is defined as a “state resulting from providing the necessary care to an impaired older adult, but that threatens either the physical or psychological well-being of the caregiver.”^[4,5]

Some studies identified caregiver burden as independent risk factor for increased mortality rate in caregivers by 63%.^[6] Studies reported that becoming a caregiver is associated with increased psychological distress.^[7] As a result of high stress, studies showed that caregivers are exposed to have high alcohol, psychotropic drugs, and other substance

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use more than non-caregivers.^[8] Caregivers have lower levels of subjective well-being and physical health than non-caregivers,^[8] and they have more physical ailments as compared to non-caregivers.^[9] It was proven that impaired function in care recipient predicts caregiver burden^[10] also falls among care recipient has a significant impact on the caregiver and it can lead to caregiver burden.^[11]

This study aimed to estimate the prevalence and to identify the predictors of caregiver burden caring for functionally impaired elderly registered at Dhahran Armed Forces hospital and King Fahad Military Medical Complex Home Services, Eastern Province, Saudi Arabia.

MATERIALS AND METHODS

Design and Setting

A cross-sectional study was conducted between January and March 2014 in two military hospitals of Dhahran Armed Forces Hospital and Military Medical Complex. A convenience sampling method was used.

Participants

All caregivers of functionally impaired elderly registered at home health care services were included in this study. A sample of 127 primary caregivers was recruited on the basis of the following inclusion criteria: (1) Primary caregivers were defined as persons who were responsible for the day-to-day decisions and providing care for someone functionally impaired. (2) Care recipient being 60 years of age or older.

Data Collection

Data were collected at caregiver's home using the following tools: (1) Structured interview questionnaire; interview took about 20 mins. The questionnaire included sociodemographic characteristics of both the caregiver and care recipient, the nature of the relationship with care recipients, duration of caregiving in years, daily hours spent on caregiving, and availability of secondary caregivers if the primary caregiver was unavailable or absent. (2) Zarit Burden Interview (ZBI); questions of ZBI, a 22-item instrument for measuring the caregiver's perceived burden from providing family care. The question has been translated to Arabic language, then reviewed by an expert, and finally piloted by a pilot study. The 22 items were assessed on a 5-point Likert scale, ranging from 0 = "never" to 4 = "nearly always." Item scores are added up to give a total score ranging from 0 to 88, with higher scores indicating greater perceived burden.

Results of 0-20 are considered little or no burden, 21-40 are considered mild to moderate burden, 41-60 are considered moderate to severe burden, and 61-88 are considered severe

burden. The burden was considered to be present if ZBI score of 21 or more.

The questions focus on major areas such as caregiver's health, psychological well-being, finances, social life, and the relationship between the caregiver and the care recipient. The burden was considered to be present if the participant reported a ZBI of 21 or more.

Ethical Consideration

The study was approved by the Regional Institutional Review Board (IRB) Committee of Saudi Board of Family Medicine, King Fahad Military Medical Complex, and Dhahran Armed Force Hospital. All participants signed informed consent before data collection. The confidentiality was maintained.

Pilot Study

A pilot study was done to test validity and reliability of data collection tools. Twenty-eight caregivers from King Fahad Military Medical Complex were included in a pilot study. Modifications were made when necessary. All participants recruited in the pilot study were excluded from the study sample.

Data Analysis

Data were entered and managed using the Statistical Package for Social Science (SPSS), version 16. A descriptive analysis using means with standard deviation, frequency counts, and percentages was carried out. The relationship between caregiver burden and study variables was addressed using Pearson correlation coefficients (r). A hierarchical multiple regression was used to identify the significant predictors that affect the level of caregivers' burden. The level of statistical significance was set at $P < 0.05$.

RESULTS

A total of 117 primary caregivers were included in the study. As shown in Table 1, about two-thirds of them were women 67.5% and 32.5% were men. Most of the caregivers were in the category of more than 40 years old, followed by the category of 25-40 years old, then the category of <25 years old of 47.9%, 40.2%, 12.0%, respectively.

More than half of caregivers were married 76.9% and 12% were singles. Caregivers as family members were reported in daughters more than sons of 46.2% and 34.2%, respectively. In terms of caregiver's educational level, the majority of them were to be of high school and college educational level 61.6%. Illiteracy or just read and write were reported in 9.4%. The vast majority of caregivers 86.3% had a monthly income <10,000 Saudi Riyal, followed by 37.6% had a monthly income between 10,000 and 20,000 Saudi Riyal, and

Table 1: Sociodemographic characteristics of primary caregivers

Characteristics	n (%)
Caregiver sex	
Male	38 (32.5)
Female	79 (67.5)
Caregiver age group	
<25	14 (12.0)
25-40	47 (40.2)
>40	56 (47.9)
Caregiver recipient group	
<70	16 (13.7)
70-80	44 (37.6)
>80	57 (48.7)
Caregiver marital status	
Married	90 (76.9)
Single	14 (12.0)
Divorce	7 (6.0)
Widow	6 (5.1)
Caregiver children	
<3	41 (35.0)
3-5	31 (26.5)
>5	45 (38.5)
Care recipient sex	
Male	39 (33.3)
Female	78 (66.7)
Relation to care recipient	
Wife	12 (10.3)
Daughter	54 (46.2)
Son	40 (34.2)
Other relative	11 (9.4)
Level of education	
Illiterate	7 (6.0)
Read and write	4 (3.4)
Elementary school	16 (13.7)
Middle school	18 (15.4)
High school	43 (36.8)
University or higher	29 (24.8)
Monthly family income	
<10,000	57 (48.7)
10,000-20,000	44 (37.6)
>20,000	16 (13.7)
Duration of caregiving	
<3 years	32 (27.4)
3-5 years	33 (28.2)
>5 years	52 (44.4)
Caregiving hours/day	
<3 h	21 (17.9)
3-6 h	30 (25.6)

Contd...

Table 1: Continued...

Characteristics	n (%)
>6	66 (56.4)
Availability of secondary caregiver	
Yes	71 (60.7)
No	46 (39.3)

finally 13.7% had a monthly income >20,000 Saudi Riyal. About half of caregivers had more than 5 years of caring for their dependents 44.4%. Most of the caregivers reported a duration of care more than 5 years while 28.2% of them spent 3-5 years and 27.4% spent <3 years in care. In terms of the actual level of caregiving involvement, such as hours per day devoted to caregiving, it was noticed that more than 6 h of caregiving was reported in more than half of the caregivers 56.4%. About one-fourth 25.6% of the caregivers spent 3-6 h of daily care and 17.9% spent <3 h of daily care. Availability of secondary caregivers was found in the majority of families 60.7%. Regarding the descriptive data of care recipients, most of them were women 66.7% and 33.3% were men. Caring for older age recipients (80 years or older) was noticed in about two-thirds of caregivers 66.7%.

The mean of primary caregivers' ZBI score was 32.9 ± 21 and most of them 65% scored 21 or more which indicated that burden was present. As shown in Table 2, 35% reported little or no burden, followed by mild to moderate burden 30.8%, then moderate to severe burden 18.8%, and finally severe burden 15.4%.

Among caregivers who had burden, i.e., those reported ZBI score 21 or more, a bivariate analysis showed a significant relation between the availability of secondary caregiver and burden ($P < 0.01$). Furthermore, care recipient's gender and daily hours of care caregiving were significantly associated with the degree of burden ($P = 0.01$ and 0.003 , respectively). Interestingly, caregiver relationship with the care recipients was inversely related to burden; in other words, fewer burdens were observed among care recipient's relatives compared to non-relative caregivers ($P = 0.01$). In addition, monthly income was inversely related to the degree of burden.

As shown in Table 3, a 3-step hierarchical regression analysis was used to identify significant predictors of caregiving burden. Step 1 tested the relationship between the caregiver's characteristics and the degree of caregiver burden ($F = 4.927$, $P < 0.001$). 11.6% of changes in the degree of burden were explained by caregiver characteristics. Interestingly, when the caregiver was relative to care recipient, the degree of burden decreased (beta = -0.327 $P < 0.001$).

Step 2 analyzed data about the care recipient; however, there was no significant relation between care recipient characteristics and degree of ($F = 1.920$, $P < 0.184$). The

Table 2: Total ZBI score reported by primary caregivers
n=117

Degree of burden	n (%)
Little or no burden	41 (35)
Mild to moderate burden	36 (30.8)
Moderate to severe burden	22 (18.8)
Sever burden	18 (15.4)

ZBI: Zarit burden Interview

Table 3: Estimates using hierarchical regression (n=117)

Socio-demographic data	Step 1	Step 2	Step 3
Caregiver gender	0.12	0.125	0.076
Age group	0.035	0.042	0.054
Caregiver marital	0.61	0.057	0.06
Caregiver children	0.048	0.075	0.036
Relation to care recipient	-0.12 ^a	-0.123 ^b	0.055 ^c
Level of education	-0.022	-0.024	-0.006
Care recipient gender		0.002	0.019
Care recipient age		-0.58	0.027
Monthly family			0.07
Duration of caregiving			0.03
Caregiving hours/day			0.041
Availability of secondary caregiver			0.286 ^b
F	2.159	1.658	2.105
SSR ²	0.105	0.109	0.195
Adjusted R ²	0.057	0.043	0.103
R ² change	0.105	0.004	0.086

^aP<0.01; ^bP<0.05; ^cNon-significant P value

adjusted R² (0.027) decreased (P < 0.184). The caregiver relationship with care recipient continued within the model as a significant negative predictor of caregiver burden (beta = -0.223, P < 0.04).

Step 3 added the caregiving involvement, such as hours per day allocated to caregiving, and the overall duration of caregiving (F = 4.849, P < 0.003). Although R² decreased, still this step explained approximately 10.2% of the variance (P < 0.003). Surprisingly, caregiver relationship with care recipient became insignificant negative predictor in the model (beta = -0.110 P < 0.318). Monthly family income was an additional significant negative predictor of caregiving burden (beta = 0.214 P < 0.019). Availability of secondary caregiver significantly predicted caregiving burden (beta = 0.204 P < 0.029). Lack of secondary caregiver was positively associated with caregiving burden.

DISCUSSION

The world is facing a progressive increase in elderly population which leads to a burden on health care sector, but it is possible to decrease this expense when family

members were involved in caring for elderly at their homes. In the other hand, this will place caregivers under physical, psychological, and financial stressors in association with their role.^[12] The current study assessed the correlates of caregiver burden on family members of elderly people. This study shows respectable prevalence of severe burden among Saudi caregivers of about 15%. Higher degrees of burden were associated with female care recipients, longer hours of caregiving, and unavailability of secondary caregivers

In the present study, most caregivers were females 67.5%; this finding was similar to other studies.^[5,10,13] This probably reflects the sociocultural expectations that are placed on females to adopt the caring role whenever a family member becomes old. The current findings indicated that most of the caregivers were daughters (46.2%), which was inconsistent with other international studies where most of the caregivers were spouses.^[5,10,13-15] This mostly goes back to their religious commitment and could be related to the cultural background where many extended families living together in one home. Similar to international studies, in this study, as high as 44.4% of caregivers reported spending more than 5 years of caring for their relatives.^[5] Most of caregivers 56.4% spent >6 h of daily care. Yet categorical time interval was used, it was similar to the mean found by similar studies.^[5,13] In terms of availability of secondary caregiver, nearly two-thirds of caregivers reported the presence of secondary caregivers. Unlike the study finding, some regional studies found that the availability of secondary caregiver was 24%.^[5] This difference could be related to socioeconomic status of different countries. The mean of the ZBI was 32.91 ± 21, which was lower than the score found by meta-analysis,^[16] which included 58 studies that used the ZBI, reported a mean burden level of 29.9 ± 9.3, suggesting that the caregivers in this study were more burdened than those in a variety of other caregiving studies. However, it was similar to some regional studies reported a mean score of 35 ± 14.1.^[5] Unlike other studies, this study found that most of the caregivers had little or no burden 35%, followed by mild to moderate burden 30.8%, then moderate to severe burden 18.8%, and finally severe burden 15.4%.^[5] This difference could be explained by three reasons. First, it could be due to the difference in socioeconomic status and availability of secondary care. Second, in the current study, most of the caregivers were daughters, while in other studies, they were spouses and generally, daughters are younger and healthier than spouses even though most of the caregivers were 40 years or older. Finally, this could be due to different samples. This study confirmed that the longer daily caregiving duration and the availability secondary caregiver had statistically significant association with caregiver burden. Several studies have found that longer daily hours of care were significantly associated with caregiver burden.^[5,10,13] Like this study findings, the secondary caregiver was proven to be significantly associated factor with caregiver burden.^[5] However, it was not considered a significant factor in some studies.^[10,13] Our study showed that burden significantly affected by female care recipient when care recipient was a

female the higher was the reported burden. This is probably because women are more emotionally sensitive and demanding special care, also in our society, women usually tend to be adherent to home in oppose to men. This finding was opposite to another study which reported that there was no relation between care recipient sex and caregiver burden.^[17] Other studies revealed that factors such as female,^[5,10,18,19] spousal,^[5,10,14,15] older caregivers,^[5,20] education,^[21] and duration of care (by years)^[5] were significantly associated with caregiver burden, but this was not the case in our study. This difference could be due to different sampling. Even we use categorical age interval rather than absolute age, still we found that caregiver age was not significantly related to caregiver burden which is similar to findings by Kim *et al.*^[10] However, this finding was inconsistent with other several studies.^[5,20]

Regarding study strengths, this was the first study of its kind in Saudi Arabia. Little is known about caregiving in Saudi Arabia, but the method used (questionnaires) in this study was somewhat subjective measure and may not reflect the actual status.

CONCLUSION

We conclude that this study provided more understanding of caregiver burden in our area. It also concluded that providing care for a disabled family member elderly is stressful. Several factors have been identified that could be associated with caregiver burden. Effective counseling, education, and multidisciplinary support are needed for caregivers of the elderly population. Further studies are needed to explore the burnout among Saudi caregivers, and we suggest studying the activities of daily living of elderly as a predictor of caregiver burden relation between caregiver burdens

REFERENCES

- World Health Organization. Global Health and Aging. Washington, DC: National Institute on Aging, National Institutes of Health, U.S. Department of Health and Human Services; 2007.
- World Population Prospects: The 2012 Revision, Highlights and Advance Tables.
- Bastawrous M. Caregiver burden – A critical discussion. *Int J Nurs Stud.* 2013;50(3):431-41.
- Zarit SH, Reever KE, Bach-Peterson J. Relatives of the impaired elderly: Correlates of feelings of burden. *Gerontologist.* 1980;20(6):649-55.
- Salama RA, El-Soud FA. Caregiver burden from caring for impaired elderly: A cross-sectional study in rural Lower Egypt. *IJPH.* 2012;9(4). DOI: 10.2427/8662.
- Schulz R, Beach SR. Caregiving as a risk factor for mortality: The Caregiver Health Effects Study. *JAMA.* 1999;282(23):2215-9.
- Marks NF, Lambert JD, Choi H. Transitions to caregiving, gender, and psychological well-being: A prospective U.S. National study. *J Marriage Fam.* 2002;64(3):657-67.
- Roth DL, Haley WE, Owen JE, Clay OJ, Goode KT. Latent growth models of the longitudinal effects of dementia caregiving: A comparison of African American and White family caregivers. *Psychol Aging.* 2001;16(3):427-36.
- Beach SR, Schulz R, Williamson GM, Miller LS, Weiner MF, Lance CE. Risk factors for potentially harmful informal caregiver behavior. *J Am Geriatr Soc.* 2005;53(2):255-61.
- Kim H, Chang M, Rose K, Kim S. Predictors of caregiver burden in caregivers of individuals with dementia. *J Adv Nurs.* 2012;68(4):846-55.
- Rinaldi P, Spazzafumo L, Mastriforti R, Mattioli P, Marvardi M, Polidori MC, et al. Predictors of high level of burden and distress in caregivers of demented patients: Results of an Italian multicenter study. *Int J Geriatr Psychiatry.* 2005;20(2):168-74.
- Schulz R, Newsom J, Mittelmarm M, Burton L, Hirsch C, Jackson S. Health effects of caregiving: The caregiver health effects study: An ancillary study of the Cardiovascular Health Study. *Ann Behav Med.* 1997;19(2):110-6.
- Morimoto T, Schreiner AS, Asano H. Caregiver burden and health-related quality of life among Japanese stroke caregivers. *Age Ageing.* 2003;32(2):218-23.
- Bédard M, Koivuranta A, Stuckey A. Health impact on caregivers of providing informal care to a cognitively impaired older adult: Rural versus urban settings. *Can J Rural Med.* 2004;9(1):15-23.
- Vedhara K, Shanks N, Anderson S, Lightman S. The role of stressors and psychosocial variables in the stress process: A study of chronic caregiver stress. *Psychosom Med.* 2000;62(3):374-85.
- Pinquart M, Sörensen S. Ethnic differences in stressors, resources, and psychological outcomes of family caregiving: A meta-analysis. *Gerontologist.* 2005;45(1):90-106.
- Andrén S, Elmståhl S. The relationship between caregiver burden, caregivers' perceived health and their sense of coherence in caring for elders with dementia. *J Clin Nurs.* 2008;17(6):790-9.
- Kelly DH, McGinley JL, Huxham FE, Menz HB, Watts JJ, Iansek R, et al. Health-related quality of life and strain in caregivers of Australians with Parkinson's disease: An observational study. *BMC Neurol.* 2012;12:57.
- Dow B, Meyer C, Moore KJ, Hill KD. The impact of care recipient falls on caregivers. *Aust Health Rev.* 2013;37(2):152-7.
- Nijboer C, Triemstra M, Tempelaar R, Sanderman R, van den Bos GA. Determinants of caregiving experiences and mental health of partners of cancer patients. *Am Cancer Soc.* 1999;86(4):577-88.
- Pierce LL, Thompson TL, Govoni AL, Steiner V. Caregivers' incongruence: Emotional strain in caring for persons with stroke. *Rehabil Nurs.* 2012;37(5):258-66.

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