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Research Article

Prevalence of Burnout in Dementia Caregivers, Riyadh, Saudi Arabia

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Abstract

Background: Dementia is a clinical syndrome caused by neurodegeneration. Because of the heterogeneity of clinical presentation and complexity of disease neuropathology, dementia classifications remain controversial. People with dementia generally require high levels of care, most of which is provided by informal or family caregivers. The number of caregivers has increased considerably. Burden of care in dementia represents a chief source of chronic stress to caregivers. **Objective:** The study aims to assess the prevalence of burnout among caregivers of the dementia patients and to identify the factors aggravating the burnout. **Methodology:** A cross sectional study was conducted in Riyadh Saudi Arabia. The study included 247 caregivers' families of dementia patients in PSMMC Riyadh, Saudi Arabia. Data was collected by means of a predesigned questionnaire after insure good validity and reliability. Data were analyzed by using Statistical Package for Social Studies (SPSS 22; IBM Corp., New York, NY, USA). **Results:** A total of 247 patients were enrolled in the present study, of which more than half were male (58.20%),57.09% were in the age group of 50-60 years old, and the highest percentage (36.03%) were non-educated. The highest percentage of the participants was having anxiety, with a prevalence of 49.80%, with a mean (±SD) score of 9.82(±4.51) out of 21. While the prevalence of depression was 26.72%, with a mean (±SD) score of 8.16(±3.50) out of 21. There is a significant ($P<0.05$) association between anxiety and patient educational level, and marital status, where it was the highest with non-educated and married participants at 36.47% and 45.93%, respectively. While with caregivers' characteristics, anxiety was significantly ($P>0.042$) associated with the marital status, being the highest among married caregivers at 48.50%. Only marital status showed significant association with depression and the highest prevalence of depression was with married patients at 49.66%, with a P-value of 0.005. while when coming to the caregivers' characteristics, the prevalence of depression was significantly associated with their relationship with the patient and it was the highest among those with no relationship at 41.22%, caregiver income, being the lowest among those with the highest income at 11.49%, and clinical history of psychiatric illness and the prevalence of depression was higher among those without at 70.34%, with all p-values <0.05. **Conclusion:** The prevalence of anxiety among caregivers of dementia patients was 49.80%, while the prevalence of depression was 26.72%. Low educational level and a history of psychiatric illness or taking antipsychotic medications were significant risk factors for anxiety in the current study.

Keywords: Dementia; Caregiver; Psychology; Burnout; Depression; Anxiety

Introduction

Dementia is a clinical syndrome caused by neurodegeneration and characterized by inexorably progressive deterioration in cognitive ability and capacity for independent living [1]. It affects about 47 million people worldwide and is related to dependence, poor quality of life, institutionalization, and mortality [2].

Dementia classifications are controversial due to the diversity of clinical presentation and the complexity of disease neuropathology. Alzheimer's disease, dementia with Lewy bodies, frontotemporal dementia, vascular dementia, and mixed dementias are among the dementias that have recently been prioritized in the National Plan to Address Alzheimer's Disease [3].

There are an estimated 30 million people with dementia worldwide currently, [4] and this figure is likely to double every 20 years [5]. Dementia has become a public health issue worldwide; its annual economic impact is about one trillion dollars and growing [6].

Age is the main risk factor for dementia, and the world population is aging; therefore, the number of people affected by dementia is expected to increase to 131 million in 2050, resulting in huge social and economic costs [2].

In Saudi Arabia, the age of the Saudi population is changing to the elderly. In 2016, the number of people over 60 years of age was 1.3 million (6.5 percent) and by 2050, this age group would be more than 10 million, accounting for 25 per cent of the total population [7,8]. In addition, life expectancy in the country is expected to increase from 74 to 82 years [7]. With this increase in lifespan, the risk of cognitive impairment is expected to increase [9]. The prevalence of dementia is increasing in our aging population at an alarming rate.

People with dementia generally require high levels of care, most of which is provided by informal or family caregivers. The number of caregivers has increased considerably [10]. Caregiving of dependent aged individuals is a major public health issue worldwide. The burden of care for families of patients with dementia is now considered to be a major health concern due to the growing number of people with dementia worldwide, as well as the fact that a significant part of the responsibility for caring falls on family members [11].

Burnout is a psychological syndrome in response to chronic interpersonal stressors at the work environment. Burden of care in dementia represents a chief source of chronic stress to caregivers [12,13]. Over than half of familial caregivers of dementia patients report feeling burdened, which is frequently associated with depression, anxiety, and increased physical mortality and morbidity in this cohort [14,15].

Although the dementia subtype of the patients was not assessed, a recent Brazilian study found high levels of psychological distress, exhaustion, stress, anxiety, depression, and hopelessness in dementia caregivers [16]. Numerous studies have been conducted to investigate the impact of the burden on the caregiver's physical, psychological, and social status. However, some researchers have sought solutions to prevent caregiver burnout and to identify the factors that contribute to caregiver burnout. Up to our knowledge, no previous researches in Saudi Arabia looked for the risk factors and tried to find the way of prevention of burnout. This study will be beneficial in finding the risk factors behind the burnout behind caregiving for dementia patients in Riyadh , Saudi Arabia.

Numbers of elderly people worldwide continue to grow. Increasingly these individuals require nursing and residential care to meet their needs. Nursing is an occupation associated with burnout amongst its workforce, associated with increases of emotional exhaustion, depersonalization and decreases in personal accomplishment. A previous systematic review of literature reported that most care staff for long-term care residents with dementia experience low or moderate burnout levels. Lower job satisfaction, lower perceived adequacy of staffing levels, poor care home environment, feeling unsupported, rating home leadership as poor, and caring for residents exhibiting agitated behaviour were all associated with higher burnout and stress. Working shifts and speaking English as a first language were linked to lower burnout levels [1]. A cross-sectional on 145 caregivers to discuss prevalence and predictors of burnout in this group found that; high levels of emotional exhaustion were present in 42.1% of our sample, and depersonalization was found in 22.8%. Reduced personal accomplishment was present in 38.6% of the caregivers. The caregivers' depression and the patients' delusions remained the significant predictors of emotional exhaustion [2].

Objective

1. To assess the prevalence of burnout among caregivers of the dementia patients
2. Identify the factors aggravating the burnout
3. Identify the impact on psychological and social status of those caregivers in Riyadh city, Saudi Arabia.

Participants and Methods

Study design

Cross sectional survey of informal caregivers of dementia patients. Participants were recruited from records of home health care in PSMMC Riyadh, Saudi Arabia.

Study population

The study included all caregivers' families of dementia in home health care patients in PSMMC Riyadh, Saudi Arabia.

Study sample

Sample size will be calculated. The sampled population is 254, adding 20% non- response rate; Systematic random sampling technique will be used. Participants will be taken from records of home health care in PSMMC.

Inclusion criteria: We will include all Caregivers of dementia patients, attending home health care in PSMMC, male and female individuals, adults, Saudis.

Exclusion criteria: Non-Saudi, outside Riyadh, giving care to patients with other chronic diseases and any individual who refused to participate in the study, records not found.

Study tool (data collecting form)

A predesigned questionnaire will be used for data collection after insure good validity and reliability. Respondents will receive the questionnaire to complete it. The parameters included in the questionnaire-included age, gender, occurrence of burnout, factors aggravating the burnout and its impact on psychological and social status and questions about their opinions to prevent this burnout.

Statistical analysis

Data were analyzed by using Statistical Package for Social Studies (SPSS 22; IBM Corp., New York, NY, USA). Continuous variables were expressed as mean ± standard deviation and categorical variables were expressed as percentages. Chi square test was used for categorical variables. Univariate logistic regression was used to assess the associated risk factors with the burnout among dementia caregivers. A p-value <0.05 was considered statistically significant.

Results

The characteristics of the patients and caregivers who participated in the current study are shown in table 1. A total of 247 patients were enrolled in the present study, of which more than half were male (58.20%), 57.09% were in the age group of 50-60 years old, and the highest percentage (36.03%) were non-educated. Almost half (49.60%) of the participants were married, and the highest percentage (33.74%) were with a BMI of 20-29 kg/m^2. For the caregivers, they were 243, almost two-thirds (67.90%) of them were aged from 25-44 years, and almost all of them were females (99.59%), except for only one male. Half of them (50.83%) have a university educational level, 49.79% were married. For the relationship between the patient and the caregivers, 39.59% have no relationship, while 21.22% were mothers and caregivers in relationships. A percentage of 44.67% spent <6 hours with the patient, and 41.87% caregiving the patient for 1-5 years. Almost one quarter (24.79%) of the caregiver reported psychiatric illness, and 21.16% reported taking medications for mental illness.

		Number	**%**
Patients			
Patient age	50-60 years	141	57.09
	60-70 years	47	19.03
	80-90 years	45	18.22
	->90 years	14	5.67
Patient Gender	Male	142	58.20
	Female	102	41.80
Patient Educational Status	Non-educated	89	36.03
	Primary	28	11.34
	Preparatory	29	11.74
	Secondary	49	19.84
	University or more	52	21.05
Patient Marital Status	Married	123	49.60
	Single	56	22.58
	Divorced	15	6.05
	Widowed	54	21.77

BMI	-<20	42	17.28
	20-29	82	33.74
	30-34	76	31.28
	>35	43	17.70
Caregivers			
Age	25-44 years	165	67.90
	45-64 years	54	22.22
	65-74 years	17	7.00
	>75 years	7	2.88
Gender	Male	1	0.41
	Female	240	99.59
Educational Status	Non-educated	29	12.08
	Primary	15	6.25
	Preparatory	23	9.58
	Secondary	51	21.25
	University or more	122	50.83
Marital Status	Married	119	49.79
	Single	89	37.24
	Divorced	15	6.28
	Widowed	16	6.69
Relationship with the Patient	Mother	52	21.22
	Father	43	17.55
	Brother/Sister	42	17.14
	Husband/Wife	11	4.49
	Other	97	39.59
Income	500-1000 sr	69	27.94
	2000-5000 sr	67	27.13
	5000-10000 sr	70	28.34
	>10000 sr	41	16.60
Time spent daily on patient care	<6 h	109	44.67
	7-12h	85	34.84
	24h	50	20.49
Duration of caregiving	<1 year	61	24.80
	1-5 years	103	41.87
	5-10 years	46	18.70
	>10 years	36	14.63
Clinical history of psychiatric illness	Yes	60	24.79
	No	182	75.21
Have you ever taken medication for a mental illness	Yes	51	21.16
	No	190	78.84

Table 1: Characteristics of patients and caregivers (N=250).

The highest percentage of the caregivers "strongly agree" that they don't have time to take care of themselves, and they've been stressed between caring and other family or work responsibilities at 35% and 34.03%, respectively. While the highest percentage (40.76%) of them strongly disagree that they missed a lot of their activities and interest. A positive attitude was shown when caregivers were asked if they find help from family members to take care of the patient, as 42.32% answered: "strongly agree". Data is shown in table 2.

		Number	%
Do you notice that you don‘t have time to take care of yourself?	Strongly disagree	17	7.08
	Disagree	30	12.50
	undecided	42	17.50
	agree	67	27.92
	Strongly agree	84	35.00
Do you feel that you‘ve been stressed between caring and other family or work responsibilities?	Strongly disagree	40	16.81
	undecided	47	19.75
	agree	70	29.41
	Strongly agree	81	34.03
Have you missed a lot of your activities and interest?	Strongly disagree	97	40.76
	Disagree	26	10.92
	undecided	41	17.23
	agree	73	30.67
	Strongly agree	1	0.42
Do you find help from family members to take care of the patient?	Strongly disagree	10	4.15
	Disagree	19	7.88
	undecided	38	15.77
	agree	72	29.88
	Strongly agree	102	42.32

Table 2: Attitude of caregivers (n=250).

As shown in table 3, the results revealed that the highest percentage of the participants was having anxiety, with a prevalence of 49.80%, with a mean (±SD) score of 9.82 (±4.51) out of 21. While the prevalence of depression was 26.72%, with a mean (±SD) score of 8.16(±3.50) out of 21.

		Number	Prevalence (%)
Anxiety	Normal	74.00	29.96
	Borderline abnormal	50.00	20.24
	Abnormal	123.00	49.80
Depression	Normal	97.00	39.27
	Borderline abnormal	84.00	34.01
	Abnormal	66.00	26.72
Mean of the total score for Anxiety & Depression			
		Mean	**SD**
	Anxiety (out of 21)	9.82	4.51
	Depression (out of 21)	8.16	3.50

Table 3: Prevalence of burnout among caregivers of dementia patients in Riyadh.

The characteristics of patients and caregivers by Anxiety status are shown in table 4. The results showed that there is a significant (P<0.05) association between anxiety and patient educational level, and marital status, where it was the highest with non-educated and married participants at 36.47% and 45.93%, respectively. While with caregivers' characteristics, anxiety was significantly (P>0.042) associated with the marital status, being the highest among married caregivers at 48.50%. In addition, history of psychiatric illness and taking mental illness medications were significantly correlated with the prevalence of anxiety, being higher among those without a history of psychiatric illness and those who were not receiving psychiatric medications at 69.46% and 73.96%, respectively. In contrast, there were no significant associations between the risk of anxiety and the other studied characteristics of both patients and caregivers, as all P values were >0.05.

		Anxiety status				**P value**
		Normal		**Abnormal or Borderline abnormal**		
		Number	**%**	**Number**	**%**	
Patients						
Patient age	50-60 years	40	54.05	99	58.24	0.683
	60-70 years	15	20.27	32	18.82	
	80-90 years	16	21.62	28	16.47	
	>90 years	3	4.05	11	6.47	
Patient Gender	Male	38	53.52	101	59.41	0.399
	Female	33	46.48	69	40.59	
Patient Educational status	Non-educated	26	35.14	62	36.47	0.033*
	Primary	8	10.81	20	11.76	
	Preparatory	11	14.86	18	10.59	
	Secondary	7	9.46	41	24.12	
	University or more	22	29.73	29	17.06	
Patient Marital status	Married	43	58.90	79	45.93	0.035*
	Single	14	19.18	41	23.84	
	Divorced	0	0.00	15	8.72	
	Widowed	16	21.92	37	21.51	
BMI	-<20	9	12.86	33	19.41	0.468
	20-29	28	40.00	53	31.18	
	30-34	22	31.43	53	31.18	
	>35	11	15.71	31	18.24	
Caregivers						

Age	25-44 years	49	70.00	114	67.06	0.757
	45-64 years	16	22.86	37	21.76	
	65-74 years	3	4.29	14	8.24	
	>75 years	2	2.86	5	2.94	
Gender	Male	0	0.00	1	0.58	0.718
	Female	67	100.00	170	99.42	
Educational status	Non-educated	8	11.43	21	12.50	0.653
	Primary	2	2.86	13	7.74	
	Preparatory	6	8.57	17	10.12	
	Secondary	15	21.43	34	20.24	
	University or more	39	55.71	83	49.40	
Marital status	Married	36	52.17	81	48.50	0.042*
	Single	30	43.48	58	34.73	
	Divorced	3	4.35	15	8.98	
	Widowed	0	0.00	13	7.78	
Relationship with the patient	Mother	21	29.58	29	16.96	0.050
	Father	16	22.54	27	15.79	
	Brother/Sister	9	12.68	33	19.30	
	Husband/Wife	1	1.41	10	5.85	
	Other	24	33.80	72	42.11	
Income	500-1000 sr	17	23.29	51	29.82	0.326
	2000-5000 sr	19	26.03	47	27.49	
	5000-10000 sr	20	27.40	49	28.65	
	>10000 sr	17	23.29	24	14.04	
Time spent daily on patient care	<6 h	31	43.06	76	44.97	0.481
	7-12h	23	31.94	62	36.69	
	24h	18	25.00	31	18.34	
Duration of caregiving	<1 year	18	24.66	42	24.71	0.864
	1-5 years	30	41.10	73	42.94	
	5-10 years	16	21.92	30	17.65	
	>10 years	9	12.33	25	14.71	
Clinical history of psychiatric illness	Yes	8	11.11	51	30.54	0.001*
	No	64	88.89	116	69.46	

Have you ever taken medication for a mental illness	Yes	7	9.86	44	26.04	0.005*
	No	64	90.14	125	73.96	
*Significant p value						

Table 4: Characteristics of patients and caregivers by Anxiety status.

The characteristics of the patients and the caregivers by depression status are shown in table 5. From the studied patients' characteristics, only marital status showed significant association with depression and the highest prevalence of depression was with married patients at 49.66%, with a P-value of 0.005. The caregiver-patient relationship, caregiver income, and clinical history of psychiatric illness were all significantly correlated with the prevalence of depression, with the prevalence of depression being higher among those without at 70.34 %, with all p-values 0.05.

		Depression status				P value
		Normal		Abnormal or Borderline abnormal		
		Number	%	Number	%	
Patients						
Patient age	50-60 years	52	53.61	87	59.18	0.663
	60-70 years	18	18.56	29	19.73	
	80-90 years	21	21.65	23	15.65	
	->90 years	6	6.19	8	5.44	
Patient Gender	Male	48	50.53	91	62.33	0.070
	Female	47	49.47	55	37.67	
Patient Educational status	Non-educated	35	36.46	53	35.81	0.343
	Primary	12	12.50	16	10.81	
	Preparatory	12	12.50	17	11.49	
	Secondary	13	13.54	35	23.65	
	University or more	24	25.00	27	18.24	
Patient Marital status	Married	48	50.00	74	49.66	0.005*
	Single	21	21.88	34	22.82	
	Divorced	0	0.00	15	10.07	
	Widowed	27	28.13	26	17.45	
BMI	-<20	13	14.29	29	19.46	0.642
	20-29	31	34.07	50	33.56	
	30-34	32	35.16	43	28.86	
	>35	15	16.48	27	18.12	
Caregivers						

age	25-44 years	65	69.89	98	66.67	0.938
	45-64 years	19	20.43	34	23.13	
	65-74 years	6	6.45	11	7.48	
	>75 years	3	3.23	4	2.72	
Gender	Male	0	0.00	1	0.68	0.622
	Female	90	100.00	147	99.32	
Educational status	Non-educated	8	8.79	21	14.29	0.232
	Primary	4	4.40	11	7.48	
	Preparatory	10	10.99	13	8.84	
	Secondary	15	16.48	34	23.13	
	University or more	54	59.34	68	46.26	
Marital status	Married	49	53.85	68	46.90	0.428
	Single	33	36.26	55	37.93	
	Divorced	3	3.30	12	8.28	
	Widowed	6	6.59	10	6.90	
relationship with the patient	Mother	28	29.79	22	14.86	0.036*
	Father	17	18.09	26	17.57	
	Brother/Sister	12	12.77	30	20.27	
	Husband/Wife	2	2.13	9	6.08	
	Other	35	37.23	61	41.22	
income	500-1000 sr	24	25.00	44	29.73	0.049*
	2000-5000 sr	22	22.92	44	29.73	
	5000-10000 sr	26	27.08	43	29.05	
	>10000 sr	24	25.00	17	11.49	
Time spent daily on patient care	<6 h	35	36.84	72	49.32	0.123
	7-12h	36	37.89	49	33.56	
	24h	24	25.26	25	17.12	
Duration of caregiving	<1 year	21	21.88	39	26.53	0.829
	1-5 years	42	43.75	61	41.50	
	5-10 years	18	18.75	28	19.05	
	>10 years	15	15.63	19	12.93	
Clinical history of psychiatric illness	Yes	16	17.02	43	29.66	0.027*
	No	78	82.98	102	70.34	

Have you ever taken medication for a mental illness	Yes	16	17.20	35	23.81	0.223
	No	77	82.80	112	76.19	
*Significant p value						

Table 5: Characteristics of patients and caregivers by Depression status.

Table 6 shows the univariate logistic regression for the associated risk factors with Anxiety. Compared to subjects with a university or more educational level, those with a secondary educational level have more than four folds increased risk of anxiety (Odds ratio=4.44, 95% CI (1.68-11.77) and a P-value of 0.003. in addition, those with psychiatric illness and those who are receiving mental illness medications have a significantly more than three times risk of anxiety compared to those without physicatric illness with Odds ratio of 3.52 (95%CI (1.57-7.87), with a P-value of 0.002), and 3.22 (95% CI(1.37 -7.55), and p-value of 0.007), respectively. The significant (P<0.05) risk factors associated with depression in the current study were relationship with the patient, income, and clinical history of psychiatric illness, as shown in table 7.

		Odds ratio	**95% CI**		**P value**
			Lower	**Upper**	
Patient Educational status	Non-educated	1.81	0.88	3.71	0.106
	Primary	1.90	0.70	5.10	0.205
	Preparatory	1.24	0.49	3.15	0.650
	Secondary	4.44	1.68	11.77	0.003*
	University or more**	1.00			
Patient Marital status	Married	0.79	0.40	1.59	0.516
	Single	1.27	0.54	2.94	0.583
	Widowed**	1.00			
Caregivers Marital status	Married**	1.00			
	Single	0.86	0.48	1.55	0.614
	Widowed	1.93	0.52	7.18	0.329
Clinical history of psychiatric illness	Yes	3.52	1.57	7.87	0.002*
	No**	1.00			
Have you ever taken medication for a mental illness	Yes	3.22	1.37	7.55	0.007*
	No**	1.00			
*Significant p value; ** Used as a reference					

Table 6: Univariate logistic regression for the associated risk factors with Anxiety.

		Odds ratio	**95% CI**		**P value**
			Lower	**Upper**	
Patient Marital status	Married	1.60	0.84	3.07	0.156
	Single	1.68	0.78	3.61	0.183
	Widowed**	1.00			
relationship with the patient	Mother**	1.00			
	Father	1.95	0.85	4.45	0.115
	Brother/Sister	3.18	1.33	7.61	0.009*
	Husband/Wife	5.73	1.12	29.25	0.036*
	Other	2.22	1.11	4.45	0.025*

income	500-1000 sr	2.59	1.17	5.74	0.019*
	2000-5000 sr	2.82	1.26	6.32	0.011*
	5000-10000 sr	2.33	1.06	5.14	0.035*
	>10000 sr**	1.00			
Clinical history of psychiatric illness	Yes	2.06	1.08	3.92	0.029*
	No**	1.00			
*Significant p value; **Used as a reference					

Table 7: Univariate logistic regression for the associated risk factors with Depression.

Discussion

Caregivers are an important national resource in health care. Families are frequently the primary source of home care and support for dementia patients relatives, contributing services that would cost hundreds of billions of dollars if purchased [17]. Dementia is a consistent source of concern for the public health system. Also has an impact on family members who provide informal care, frequently resulting in burnout due to caregivers' emotional and physical distress [9].

Primary stressors, such as the patient's behaviour problems, such as day and nighttime wandering, emotional outbursts, and unacceptable behaviour, are the strongest predictors of caregiver burden, depression, and stress – related disorders for dementia caregivers. However, the type of dementia and the behavioural problems that are most strongly associated with it may also play a role in caregiver distress [17]. Caregivers of dementia feel more burdened when their caregiving intensity is higher and they receive fewer perceived benefits or motivates. Surprisingly, while physical impairments in nondemented patients increase caregiver burden, this is rarely true for dementia caregivers [5,17].

Most of the caregivers in our sample 39.59% have no relationship with the patient, while 21.22% was caring for their mother. Compared to previous studies, a study found that most caregivers were daughters of the patients, and the next most frequent group included spouses [18]. This finding is consistent with previous studies conducted in Brazil, which found that daughters were the primary caregivers of patients with dementia [19,20].

Strain can evident as psychological morbidity, including depression and anxiety. Our results revealed that the highest percentage of the participants was having anxiety, with a prevalence of 49.80%, while the prevalence of depression was 26.72%. A robust relationship between dementia caregiving and negative effects on psychological health has been demonstrated in numerous studies [21-23]. Rates of depression vary between 23% and 85% in developed countries, [24,25] and of anxiety between 16% and 45% [26-28]. In the developing countries psychiatric morbidity range from 40% to 75% [29]. A study included 117 informal caregivers, found that 23.1% of them had a high risk for depression and 41.0% were identified to be likely to have mental problems with a stable pattern of psychological distress over time [9].

Previous studies found that higher levels of burnout were associated with higher levels of depressive symptoms and lower quality of life. These findings imply that caregiver intervention to reduce burnout may benefit from depression and quality of life strategies [5]. According to a systematic review of the consequences of Burnout Syndrome in informal caregivers of older adults with dementia, burnout syndrome negatively affected caregivers' quality of life and was associated with patient depressive and anxious symptoms as well as abusive behaviour by caregiver [3].

On contrary to most previous studies, our study found no significant association between anxiety or depression with time spent on caregiving. A previous study found that dementia caregivers who had longer caregiving time were more vulnerable to develop burnout in both regions [21]. This is consistent with prior research, which found that caregivers who provide intensive care are more likely to experience caregiver burnout depending on the intensity of the caregiving tasks [22]. A lengthy caregiving period may also imply that caregivers must sacrifice more personal and work time to care for the care-recipients. Thus, it is critical to provide an effective caregiver support service in order to maintain the quality of life of caregiving dyads by assisting caregivers in providing care and allowing them to receive respite from the long caregiving time. A systematic review found that cross approaches could substantially decrease caregiver burden despite physically demanding caregiving duties; and symptoms management advice provided by nursing and health professionals was proved to be efficient in relieving burden in dementia caregivers [23].

Our study found significant ($P<0.05$) association between anxiety and marital status, being the highest among married caregivers at 48.50%. In addition, history of psychiatric illness and taking mental illness medications were significantly correlated with the prevalence of anxiety, being higher among those without a history of psychiatric illness and those who weren't receiving psychiatric medications at 69.46% and 73.96%, respectively. As for depression, caregiver relationship with the patient was significantly associated with prevalence, which was highest among those with no relationship at 41.22 percent, caregiver income, which was lowest among those with the highest income at 11.49 percent, and clinical history of psychiatric illness and the prevalence of depression was higher among those without at 70.34%, with all p-values <0.05. This was on the line with a study reported that several significant associations were found between Emotional Exhaustion (EE) and the caregivers' characteristics. Female caregivers experienced greater emotional exhaustion than male caregivers. Caregivers who revealed physical symptoms in addition to psychological changes, such as sadness, anxiety, insomnia, irritability, and fatigue, had higher EE scores than those who did not. Those who reported a "desire to die" had higher EE scores (p 0.05). In caregivers, there was a statistically significant relationship between higher Beck Depression Inventory (BDI) and Beck Anxiety Inventory (BAI) scores and higher EE scores [18].

To date, studies suggest that intervention effects are generally minor. Psychoeducational strategies are the most effective among the various types of caregiver interventions in terms of improving caregiver knowledge, reducing caregiver burden and depression, and rising well-being and caregiver satisfaction. Lowering secondary sources of stress such as social isolation, as well as approaches that reduce caregivers' perceived pressure and burden are effective methods in assisting caregivers. Nevertheless, these interventions must be tested further. Eventually, highly collaborative care models have received increased attention in the treatment of late-life mood disorders in primary care, and they have proven to be an effective approach to reducing behavioural symptoms in dementia patients as well as caregiver burden and distress. The blast of caregiver studies throughout the last 15 years is a promising sign that assistance is on the way for severe ill elderly persons and those who provide care in the community. Nevertheless, what such a care should entail, whom it should be prescribed to, in what setting, and at what dose, are all pressing concerns.

Conclusion

The prevalence of anxiety among caregivers of dementia patients was 49.80%, while the prevalence of depression was 26.72%. Low educational level and a history of psychiatric illness or taking antipsychotic medications were significant risk factors for anxiety in the current study. While the relationship between the caregiver with the patient, income and clinical history of psychiatric illness were the significant risk factors for depression.

Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

Animal and Human Rights Statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

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