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ORIGINAL RESEARCH **PUBLIC HEALTH**

A descriptive cross-sectional study of the relationship between family quality of life, chronically ill elderly, and caregiver burden

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ABSTRACT

Background & objective: The substantial physical and financial demands associated with caregiving may significantly reduce the overall quality of life for affected families, particularly in societies where family members commonly assume primary caregiving roles for elderly individuals or those with chronic illnesses. This study aims to explore the relationship between family caregiver burden and family quality of life.

Methodology: A descriptive cross-sectional study was conducted among families of elderly individuals with chronic diseases to assess caregiver burden and family quality of life. A non-probability purposive sample of 250 caregivers was recruited. The study was conducted from November 01, 2024, to September 04, 2025.

Results: The results revealed a statistically significant moderate positive correlation between caregiver burden and family quality of life ($P < 0.05$).

Conclusions: Families experiencing lower quality of life may face challenges in providing effective care, as prolonged caregiving demands and the complex needs associated with chronic illness can intensify caregiver burden and strain overall family well-being.

Keywords: Relationship; Family quality of life; Caregiver burden

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1. INTRODUCTION

While the world's population continues to age, caregivers who provide vital support to older adults are becoming increasingly important.[1] With aging, disabilities among older adults increase; hence, there is a substantial rise in the number of people dependent on care and greater pressure on family caregivers.[2,3]

Family quality of life (FQOL) is a conceptual model assessed based on family needs and overall satisfaction with life as a family unit. It encompasses several dimensions, including emotional well-being, physical health, financial stability, and social relationships.[4]

FQOL is an important construct that reflects the overall well-being of families, especially in the context of caregiving, disability, and chronic illness. It highlights the role of family dynamics, support systems, and the collective satisfaction and well-being of family members.[5,6]

Family caregiving burden encompasses a range of challenges and stresses experienced by relatives caring for individuals with chronic illnesses, disabilities, or other health-related conditions. These burdens may be emotional, physical, financial, or social in nature.[7]

Such burdens can lead to a reduced overall quality of life (QoL) for families, particularly in societies where a large proportion of the population frequently assumes caregiving responsibilities for elderly or chronically ill individuals.[8] Recent studies in the Arab world indicate that family caregivers encounter substantial challenges, particularly in palliative care settings. In Saudi Arabia, for example, high levels of caregiver stress have been reported, with variations in satisfaction with healthcare services depending on care setting and geographic region.[9]

2. METHODOLOGY

2.1. Study Design and Setting

A descriptive cross-sectional study was conducted among families of elderly individuals with chronic diseases, with the aim of assessing caregiver burden and family quality of life. Families were eligible if they had at least one family member aged 65 years or older with a chronic illness. Caregivers were family members providing daily or near-daily care for at least six months. A non-probability (purposive) sample of 250 caregivers was selected.

A questionnaire was developed based on a literature review and previous studies. It consists of four sections:

Section 1: Sociodemographic data of caregivers
Section 2: Sociodemographic data of older adults
Section 3: Zarit Burden Inventory (ZBI)
Section 4: Family Quality of Life Scale

Participants received full information about the study and its objectives before providing verbal consent. Confidentiality of participant data was strictly ensured.

The questionnaire was completed either by the caregiver independently or through face-to-face interviews, in which the researcher read the questions and recorded responses, allowing clarification when needed. Caregivers were informed about the study purpose and guided on how to complete the questionnaire accurately.

2.2. Statistical Analysis

All data in the current study were entered into SPSS version 20. The minimum and maximum values, mean, and standard deviation were calculated. One-way ANOVA and independent t-tests were used for quantitative data, depending on whether the assumptions for each test were met. A p-value ≤ 0.05 was considered statistically significant.

3. RESULTS

Table 1 presents the demographic characteristics of the 250 caregivers of chronically ill elderly individuals. The majority of caregivers were young adults, with 53.2% aged 26–35 years and a mean age of 33.68 ± 7.41 years. Women comprised 78% of the sample. Most caregivers (93.6%) lived in urban areas, suggesting easier access to caregiving resources. A considerable proportion (51.6%) reported "fairly enough" income, whereas 28% experienced financial difficulties, indicating economic strain. Educational levels varied, with 35.6% having completed primary school and 12.4% reaching university-level education, and 72.4% of caregivers were married. The majority resided in mid-sized households of 6–10 members (71.2%) and provided daily care for more than 10 hours on average (mean = 10.19 ± 2.48). Most elderly care recipients (90.8%) did not require assistance with personal hygiene. Sons and daughters represented 69.6% of the caregiver population.

According to Table 2, 53.2% of the 250 chronically ill elderly patients were aged 70 years or younger, with a mean age of 72.56 ± 7.09 years, indicating that most participants were in the early stages of old age. Females predominated (80%), reflecting gender differences in longevity and care-seeking behaviors. The most common chronic conditions were diabetes (30.8%), hypertension (22.4%), and heart disease (21.2%), highlighting the prevalence of lifestyle-related non-communicable diseases. Dementia (11.6%) and stroke (8%) were less frequent. Long-term illness was common, with 44.4% of elderly individuals experiencing chronic disease for 11–15 years and a mean duration of 12.51 ± 5.5 years, indicating ongoing healthcare needs.

Caregiver burden, as measured by the Zarit Burden Interview (ZBI) for 250 caregivers, is presented in Table 3. Results indicated that 57.2% of caregivers experienced mild to moderate burden, with a mean score of 41.32. Moderate to severe burden was reported by 40.4% of caregivers, while only 2.4% reported minimal or no burden, and none experienced severe burden.

The Family Quality of Life (FQOL) scale results are shown in Table 4. Most caregivers (57.6%) reported low family quality of life, 38% reported moderate quality of life, and only 4.4% reported high quality of life. The overall mean score was 34.18, reflecting predominantly low family quality of life among caregivers of chronically ill elderly individuals.

Table 5 presents the correlations between caregiver burden (ZBI) and various domains of FQOL. Strong positive correlations were observed across all FQOL domains, with Parenting and Family Interaction showing the highest correlation ($r = 0.801$, $^{**}P < 0.01$), indicating that these areas are closely linked to overall family well-

Table 1: Demographic data of caregivers (n = 250).

Demographic Data	Rating and Intervals	n (%)
Age Groups (Years)	≤ 25	42 (16.80)
	26 - 35	133 (53.20)
	36 - 45	60 (24)
	≥ 46	15 (6)
	Mean ± SD (Min– Max)	33.68 ± 7.41 (20-56)
Gender	Males	55 (22)
	Females	195 (78)
Address	Rural	16 (6.40)
	Urban	234 (93.60)
Monthly income	Enough	51 (20.40)
	Not enough	70 (28)
	Fairly enough	129 (51.60)
Marital status	Married	181 (72.40)
	Single	26 (10.40)
	Divorced	9 (3.60)
	Widowed	34 (13.60)
Educational level	Uneducated	18 (7.20)
	Read and write	63 (25.20)
	Primary	89 (35.60)
	Secondary	49 (19.60)
	University and above	31 (12.40)
Number of family member	<= 5	20 (8)
	6 - 10	178 (71.20)
	11 - 15	47 (18.80)
	16 and More	5 (2)
	Mean ± SD (Min – Max)	8.51 ± 2.87 (3-23)
Duration of daily care	<= 5	1 (.40)
	6 - 10	134 (53.60)
	11 - 15	109 (43.60)
	16 and More	6 (2.40)
	Mean ± SD (Min – Max)	10.19 ± 2.48 (5-24)
The elderly depends on someone to relieve?	Yes	23 (9.20)
Relationship with the elderly person	Son/daughter	174 (69.60)
	Husband/wife	38 (15.20)
	Brother/sister	19 (7.60)
	Grandson/granddaughter	17 (6.80)
	relatives	2 (.80)

Data are presented as mean ± SD or n (%);

Table 2: Demographic data for the chronically ill elderly (n = 250)

Demographic Data	Rating and Intervals	n (%)
Age Groups (years)	<= 70	133 (53.20)
	71 - 80	84 (33.60)
	81 - 90	30 (12)
	91 and More	3 (1.20)
	Mean ± SD (Min – Max)	72.56 ± 7.09 (64-109)
Gender	Males	50 (20)
	Females	200 (80)
Chronic illness types	Dementia	29 (11.60)
	Heart disease	53 (21.20)
	Stroke	20 (8)
	Diabetes	77 (30.80)
	Hypertension	56 (22.40)
	other	15 (6)
Duration of diagnosis of chronic disease	<= 5	25 (10)
	6 - 10	59 (23.60)
	11 - 15	111 (44.40)
	16 - 20	28 (11.20)
	21 - 25	23 (9.20)
	26 and More	4 (1.60)
	Mean ± SD (Min– Max)	12.51 ± 5.5 (2-32)

Data are presented as mean ± SD or n (%);

being. All FQOL domains, except Emotional Well-being, demonstrated significant positive associations with ZBI, suggesting that higher caregiver burden may be associated with increased involvement and perceived responsibility, possibly enhancing family support and interaction. Elderly-related Support exhibited the strongest association with ZBI (r = 0.327, **P < 0.01), underscoring its importance in caregiver experiences. These findings highlight the complex, interrelated nature of caregiver burden and family quality of life, emphasizing the need for holistic interventions that address both family functioning and caregiver strain.

4. DISCUSSION

The findings indicated that the predominant age demographics for caregivers were 26–35 years and 36–45 years, comprising 53.2% and 24%, respectively.[2] Seventy-eight percent of the study sample were females, with the majority of caregivers residing in the city (93.6%).[3] Married caregivers were the predominant majority (72.4%), with the largest subgroup having basic education (35.6%).[4] The analysis indicated that the predominant family size among the sample comprised 6–

Table 3: Statistical distribution of overall items of caregiver burden for chronically ill elderly according to Zarit burden interview scale (n = 250).

Overall Items	Rating and Intervals	n (%)	Sum of Scores	Assess
Caregiver burden (ZBI)	Low or no burden	6 (2.40)	41.32	
	Mild to moderate burden	143 (57.20)		moderate to severe burden
	Moderate to severe burden	101 (40.40)		
	Severe burden	0 (0)		
Family Quality of Life Scale (FQOL)	Low	144 (57.60)	34.18	Low quality of life
	Moderate	95 (38)		
	High	11 (4.40)		

zBurden (0 - 20 = low or no), (21- 40 = mild to moderate, (41- 60 = moderate to severe), (61- 88 = severe burden), Assess= assessment; Quality of life (25 – 50: Low), (51 – 75: Moderate), (76 – 100: High),

Table 4: Statistical correlation between family quality of life for chronically ill elderly and ZBI (N=250).

Variables		Parenting	Emotional well - being	Financial well - being	Elderly - related support	Family Quality of Life	ZBI
Family interaction	r	.568**	.335**	.475**	.329**	.789**	.164**
	Sig.	.0001	.0001	.0001	.0001	.0001	.009
Parenting	r		.490**	.452**	.196**	.801**	.151*
	Sig.		.0001	.0001	.002	.0001	.017
Emotional well - being	r			.297**	.103	.635**	.111
	Sig.			.0001	.104	.0001	.080
Financial well - being	r				.376**	.737**	.201**
	Sig.				.0001	.0001	.001
Elderly - related support	r					.532**	.327**
	Sig.					.0001	.0001
Family Quality of Life	r						.262**
	Sig.						.0001

**: Correlation is significant at the 0.05 level., **: Correlation is significant at the 0.01 level. And r: Pearson Correlation statistical test*

10 individuals (71.2%).[5] It also indicated that the majority of caregivers dedicated 6–10 hours daily to the elderly (53.6%). It was disclosed that 90.8% of the elderly were not reliant on others to fulfill their personal requirements. Caregivers were predominantly sons and daughters, comprising 69.6%, indicating that caregivers are more vulnerable to psychological burden, especially if they work in tiring daily jobs.

A majority of the elderly (53.2%) were below the age of 70.[10] The investigation revealed that 80% of the subjects were women, with diabetes being the most prevalent chronic condition at 30.8%. Our findings align with a prior study, which indicated that diabetes is the predominant disease globally among the senior population.[11] The study indicated that 44.4% of the sample had been diagnosed with a chronic condition for 11–15 years. Extended duration of sickness has been shown to correlate with heightened psychological, social, and economic pressures on families, resulting in increased familial strain and a decline in quality of life.[12]

The findings indicated that the largest percentage of caregivers for older individuals with chronic diseases encountered mild to moderate burden (57.2%). Additionally, 41.2% of caregivers experienced significant difficulty, while only 2.4% reported little or negligible burden. Only 4.4% of participants exhibited a high quality of life; 38% demonstrated an average quality of life, and 57.6% indicated a low quality of life.[13] Diminished quality of life among family caregivers was found to correlate with the degree of caregiver burden.

Table 5: Relationship between demographic data of caregiver with Zarit burden and family quality of life.

Demographic Data	Zarit		Family Quality of Life	
	Statistical Test	P-value	Statistical Test	P-value (Sig)
Age Groups (Years)	.814#	.487	2.390#	.069
Gender	.403^	.687	1.140^	.255
Address	.551^	.582	.702^	.483
Monthly income	.604#	.548	.081#	.923
Marital status	2.502#	.060	.484#	.694
Educational level	2.845#	.025	1.071#	.371
Number of family member	3.297#	.021	3.372#	.019
Duration of daily care	.385#	.764	1.759#	.156
Does the elderly depend on someone to relieve himself?	1.988^	.048	.293^	.770
Relationship with the elderly person	1.944#	.104	.463#	.763

Significant at $P < 0.05$), HS: High Significant at $P < 0.01$, #: One Way ANOVA, ^: Independent t test.

There is a favorable link between family interaction and quality of life ($r = 0.789$, $P < 0.001$), as well as caregiver burden. The low but statistically significant positive association between family interaction and caregiver burden (ZBI) ($r = 0.164$, $P = 0.009$) suggests that more involved families may experience burnout owing to extended caregiving duties. Families who frequently engage with elderly relatives often experience moderate psychological and physical stress.[14] Emotional well-being, family quality of life, and caregiver burden demonstrated a significant positive correlation ($r = 0.801$, $P < 0.0001$), indicating that families with better parenting practices have higher quality of life. A weak but significant association was found between parenting and caregiver burden (ZBI) ($r = 0.151$, $P = 0.017$), suggesting that families with stronger parenting roles may experience additional tasks due to high elder care demands. Families who are eager to fulfill traditional responsibilities toward parents may experience psychological stress.[15]

Table 6 showed a statistically significant relationship between educational level and caregiver burden ($P = 0.025$). This may be explained by the fact that individuals with higher educational levels may have greater awareness of their responsibilities and requirements, which increases their levels of responsibility and stress. This finding is supported by prior research, which showed that lower education levels increase caregiver burden, whereas higher education is associated with greater awareness.[16] There was a statistically significant relationship between the number of family members actively participating in caregiving ($p = 0.021$) and family life quality ($p = 0.019$), suggesting that a larger family network positively affects caregiver well-being. Dependence on others from primary family units was statistically significant ($p = 0.048$), confirming that being a caregiver entails full psychological responsibility for an older person's progress toward independence. No statistically significant relationships were observed between monthly income and caregiver well-being or family quality of life.

5. CONCLUSION

The findings of this study reveal a significant connection between family quality of life (FQOL) and caregiver burden among families caring for chronically ill elderly individuals. The moderate negative relationship indicates that as caregiver burden increases, family quality of life tends to decrease, highlighting the challenges faced by caregivers in managing their responsibilities. The demographic analysis shows that the majority of caregivers are young adults, predominantly female, and often reside in urban areas. These caregivers report spending substantial time providing care, which correlates with increased emotional and financial strain. Notably, a significant portion of caregivers experiences mild to moderate burden, with only a small percentage reporting a high quality of life.

The high prevalence of chronic illnesses among the elderly population, particularly diabetes and hypertension, underscores the need for targeted support systems to alleviate caregiver stress and enhance overall family well-being.

6. Data availability

The numerical data generated during this research are available from the authors.

7. Conflict of interest

All authors declare that there was no conflict of interest.

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10. Authors' contribution

MJW: Study design and supervision, screening and eligibility assessment, quality assessment of included:articles, review and editing of the manuscript.

HMAA Study design, systematic search in databases, screening and eligibility assessment, writing the screening and eligibility assessment, review and editing of the manuscript.

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