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Psychological Distress among Caregivers of Individuals with Alzheimer in Pakistan: A Quantitative Study

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Abstract: *The objective of the study is to examine the association between psychological distress—operationalized as depression, anxiety, and stress—among caregivers in Pakistan of individuals with Alzheimer. Using a cross-sectional correlational design and purposive sampling, data were Collected from 250 caregivers. The results revealed a significant positive association between stress, anxiety, and depression. Hayes' Macro Process 4.1, Model 4, demonstrated that anxiety significantly and positively mediates the association between stress and depression. The findings were discussed in relation to existing literature and practical recommendations were provided to enhance caregiver well-being. These include offering counselling services, raising awareness about Alzheimer's disease, encouraging peer support networks, promoting access to professional mental health care, providing guidance on effective caregiving strategies, and emphasizing the importance of establishing government-run programs and support groups for Alzheimer's caregivers.*

Keywords: Depression, Stress, Anxiety, Caregivers, Alzheimer

Introduction

Alzheimer's disease is a brain disorder that impairs memory, thinking, and the ability to perform basic tasks. Common symptoms include forgetting recent events, misplacing items, and exhibiting poor judgment (Goedert et al., 2012; Morley et al., 2018; Starkstein et al., 2007). Its development is influenced by genetic, lifestyle, and environmental factors (Bhushan et al., 2018; Bird, 2008; Masters et al., 2015; Tanzi, 2012).

Caregiver can be described as the person or individual who could be a member of a family, could be helper being paid for care, that look consistently and regularly after a patient, elderly or child or disable person (Chiao et al., 2015; Hermanns & Mastel-Smith, 2012; Hunt, 2003). Studies have depicted that the life of caregivers is never easy it leads to distress which is often overlooked (Fujinami et al., 2015; Kirk et al., 2022; Sun et al., 2021). Caregivers of individuals with Alzheimer's disease often experience high levels of mental health issues. Studies have shown that caregiving for individuals with neurocognitive disorders is associated with increased rates of adverse mental health outcomes, including anxiety (a state of tension, worry, and uneasiness), depression (persistent sadness, disinterest in daily and pleasurable activities, difficulty making decisions, negative thinking, suicidal ideation or attempts), and stress (a state of emotional strain and pressure) (Cooper et al., 2008; Ferrara et al., 2008; Liu et al., 2017).

A meta-analysis of 17 studies involving over 10,000 caregivers found notable rates of depression, anxiety, and psychotropic drug use. Depression was more prevalent in female caregivers, higher in those caring for male patients, and more common among spousal caregivers (Sallim et al., 2015). Additionally, a comparison between Alzheimer's caregivers and non-caregivers revealed moderate to large differences in depression and anxiety levels, with female caregivers experiencing worse mental health outcomes (Ma et al., 2018). Caregiver stress, particularly among female and family caregivers, can have detrimental effects

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on overall health. A study conducted in Isfahan, Iran, reported higher stress levels among female caregivers and those without prior caregiving experience (Zahed et al., 2020).

A theory of caregiver stress derived from the Roy Adaptation Model (RAM) explored the relationships between objective burden, coping mechanisms, and adaptive modes in relation to caregiver stress, depression, and anxiety. The study found that while the objective caregiving burden did not directly predict caregiver outcomes, perceived caregiver stress and depression were closely related. Depression emerged as the most significant outcome of stress. Contextual stimuli had a limited effect on caregiver stress. Moreover, caregiver burden, anxiety, and depression were interrelated, with neuropsychiatric symptoms in Alzheimer's patients contributing significantly to caregiver stress (Tsai, 1988). Caregiver stress, which results from the unequal exchange in close relationships, can lead to both emotional and physical strain (Llanque et al., 2016). Lou et al. (2015) found that neuropsychiatric symptoms in Alzheimer's patients—such as depression, apathy, and anxiety—were significantly associated with increased caregiver burden, anxiety, and depression. Some previous and recent studies have indicated that the causes of distress among caregivers may include financial strain, physical exhaustion, emotional fatigue from managing the daily challenges of caring for a patient with Alzheimer's, and a lack of social support from the community. Witnessing the decline of a loved one with Alzheimer's can be particularly heart-breaking. Additionally, sleep disturbances can intensify symptoms of distress, and the lack of effective coping mechanisms and caregiving skills further exacerbates caregiver stress (Azevedo et al., 2021; Mao et al., 2025; Gehrman et al., 2018; Vu et al., 2022).

There is a notable lack of research on the psychological distress experienced by caregivers of individuals with Alzheimer's in Pakistan. Therefore, the objective of this study is to address this gap and offer insights and implications for caregivers within the Pakistani context. Psychological distress is operationalized as depression, anxiety, and stress in this study

Hypotheses

1. Stress is likely to be positively and significantly associated with depression and anxiety among caregivers of individuals with Alzheimer in Pakistan.
2. Anxiety is likely to mediate the association between stress and depression among caregivers of individuals with Alzheimer in Pakistan.

Method

The study employed a cross-sectional correlational research design to investigate the relationship between anxiety, depression, and stress among caregivers of individuals with Alzheimer disorder. Data were collected through purposive sampling from 250 caregivers of individuals diagnosed with Alzheimer's disease. Participants had to meet the following inclusion criteria: caregivers must be actively caring for at least one patient diagnosed with Alzheimer from a reputable mental health hospital, the patient must be at least 65 years old, caregivers must have at least an intermediate level of education, and they must be citizens of Pakistan. Both male and female caregivers were included. The Depression Anxiety Stress Scale (DASS-21) shorter version is a 21-item scale uses a four-point Likert scale (0-4). The scale has Cronbach's alpha values of 0.88 for depression, 0.82 for anxiety, and 0.90 for stress (Lovibond & Lovibond, 1995). Ethical considerations adhered to the APA 7 code of conduct, and permission was obtained from both the department and the authors to use the questionnaire. The study ensured participants' confidentiality and obtained informed consent, clarifying that participation was voluntary and that they could withdraw at any time. Participants completed the questionnaires in approximately 20 minutes, and their involvement was highly appreciated. Data were analyzed using SPSS version 27.

Results

Table 1

Participants' Characteristics (N=250)

Characteristics	f	%	M	SD
Age			37.57	9.82
Caregivers of individuals with Alzheimer				
Men	70	28		
Women	180	72		

Characteristics	f	%	M	SD
Education				
Intermediate	125	50		
Bachelor	72	29		
Master	28	11		
PhD	25	10		

The demographic characteristics of the participants show a mean age of 37.57 + 9.94. Moreover, the majority of the caregivers were women, with 180 (72%) women participants compared to 70 (28%) men participants. In terms of educational qualifications, 125 participants (50%) had completed an intermediate qualified, followed by 72 participants (29%) with a bachelor qualified, 28 participants (11%) with a master qualified, and 25 participants (10%) holding a Ph.D.

Table 2

Correlational among Study Variables (N=250)

Variables	1	2	3
1. Depression	-	.97**	.53**
2. Anxiety		-	.50**
3. Stress			-

Note. **p<.01

The above table shows a significant positive association between depression, anxiety and stress.

Table 3

Mediation Analysis (N=250)

		Consequences						
		A (M)				D (Y)		
Antecedents		β	SE	P		β	SE	P
S (X)	a	.48	.05	.000	c'	.05	.01	.000
A (M)	-				b	.96	.01	.000
Constant	I	5.89	.69	.000	I	-.31	.20	.000
	R^2=.25	F (1, 248) = 84.73			R^2=.95	F (2, 247) = 2408.85		

Note. ***p<.001, S = Stress, A= Anxiety, D = Depression

The table depicts a significant positive effect of stress on anxiety (β=.48***, SE=.05). The stress also predicts depression significant (β=.05***, SE=.01,). Similarly, the effect of anxiety or depression is also positive and significant (β=.96***, SE=.01).

Table 4

Indirect Effect (N=250)

Indirect Path	Effect	Standardised Effect	LLCI	ULCI
Anxiety	.47	.47	.37	.57

The above table demonstrates significant indirect effect of anxiety between stress and depression.

Discussion

There is limited literature related to the psychological distress of caregivers, such as depression, anxiety, and stress, among individuals with Alzheimer in Pakistan. Therefore, this study was conducted to address this gap and provide implications for distressed caregivers.

The correlational analysis supported first assumption as it indicates a significant association between depression, anxiety, and stress among caregivers of individuals with Alzheimer. The results of this study are aligned with the findings of similar research that depicts a significant association between mental health distress i.e. depression, stress and anxiety in caregivers of individuals with neurodevelopmental and neurocognitive disorders in Pakistan (Irshad et al., 2025). Few more studies align with the result of this

study that demonstrated that as the stress elevates in the caregivers of psychiatric patients so does the symptoms of depression and anxiety (Fatima et al., 2025; Mustfa et al., 2025). The reason behind the significant association between depression, anxiety, and stress could be the lack of awareness regarding coping strategies for caregivers in Pakistan. Additionally, social isolation due to discriminatory behavior in society might contribute, as there is limited awareness about mental health problems, and a lack of facilities exacerbates mental health distress.

The second hypothesis of the study is also supported, as the mediation analysis using Hayes Process Macro 4.1, Model 4, shows a significant mediating role of anxiety between the stress and depression among caregivers of individuals with Alzheimer's disease in Pakistan. Previous and recent studies have shown that, among caregivers of mentally unhealthy individuals, stress predicts anxiety and anxiety predicts depression (Alfakhri et al., 2018; Cabral et al., 2014; Ejem et al., 2015; Fatima et al., 2025; Tareen et al., 2025). The significant mediating role of anxiety between the stress and depression could be due to chronic stress triggering excessive worrying thoughts and emotional exhaustion, which ultimately reduce coping abilities and lead to depression. Pakistan is a collectivistic society, where elderly respect is highly regarded, which further exacerbates the issues for caregivers. There is also a scarcity of facilities and awareness, making psychological distress among caregivers common.

Limitations and Recommendations

Future studies need to consider G power formula for sample selection, since the cohort of this study may not be generalized on the whole caregiver's population. The second limitation is the imbalance in caregiver gender and educational qualifications. Future studies should address this imbalance to identify mean differences across demographic variables. Additionally, the data was collected only from caregivers with intermediate qualifications, which is another shortcoming of the study. Future research should include caregivers with lower educational levels as well and use a translated version of the questionnaire.

Implications

Awareness by professionals i.e. psychologist and psychiatrists can be achieved through workshops, seminars, and webinars. The media can play a positive role in spreading awareness and encouraging Alzheimer's caregivers to seek psychological help and learn coping mechanisms by consulting experts and learn the technqiue of relaxations which could be beneficial at the time of emotional exhaustions. Counselling services should be provided to affected caregivers through both offline and online platforms to enhance their well-being. It is also important to raise awareness among the general public to foster support for distressed caregivers. Additionally, the government should develop awareness programs and facilities for both Alzheimer's patients and their caregivers.

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