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DEPRESSION AMONG CAREGIVERS OF PATIENTS TREATED AT THE MEDICAL AND PHARMACEUTICAL UNIVERSITY HOSPITAL IN 2026

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ABSTRACT

Objective: To determine the prevalence and severity of depression among caregivers of hospitalized patients at the medical and pharmaceutical university hospital in 2026.

Methods: A cross-sectional descriptive study was conducted on 330 caregivers of inpatients at the medical and pharmaceutical university hospital from January 2026 to April 2026.

Results: The proportion of caregivers with depressive symptoms was 51.2%, among them, the risk of depression accounted for 22.7%; 9.7% mild depression, 9.7% moderate, and 9.1% severe depression. The mean depression score was 7.5 ± 7.2, indicating a level at risk of depression.

Conclusion: Depression among caregivers of hospitalized patients was relatively common, with nearly half being at risk of or experiencing depressive symptoms. These findings highlight the need to strengthen screening, psychological counseling, and appropriate support measures to reduce caregiver burden and improve caregivers' quality of life.

Keywords: Depression, patients, caregivers.

1. INTRODUCTION

In recent decades, Vietnam has been experiencing rapid population aging and an increasing burden of chronic diseases, particularly cardiovascular diseases, endocrine disorders, cancer, chronic kidney disease, and other long-term conditions. These trends have increased the demand for care both in hospitals and at home[1,2]. Caregivers are individuals who directly assist patients with daily activities, treatment, and emotional support; they may be family members, friends, or paid caregivers in hospitals. Caregivers play an important role in the treatment and recovery process. They not only provide physical care but also assume psychological, financial, and social responsibilities. However, prolonged caregiving burden, psychological pressure, and lack of social support make caregivers more vulnerable to stress and depression [2].

A meta-analysis of 85 studies involving more than 23,000 caregivers of patients with cancer reported a pooled prevalence of depression of approximately 25.14%[3]. A study by Le Thi Thanh (2022) found that 38.7% of caregivers of stroke patients had depressive symptoms, and more than half experienced a moderate or higher caregiving burden(4). Another study of 213 caregivers of patients with lung cancer at a provincial hospital in Northern Vietnam, conducted from June 2023 to August 2024, reported that about 29.1% had mild to severe depressive symptoms[5].

These findings highlight the practical need for hospitals to pay attention to psychological factors and social impacts on caregivers' mental health, and to implement timely counseling and support interventions. Such measures may help caregivers address their own mental health problems and collaborate more effectively with healthcare professionals in patient care. Therefore, we conducted this study to determine the prevalence and severity of depression among caregivers of hospitalized patients at the medical and pharmaceutical university hospital in 2026.

2. METHODS

2.1. Study participants: The study participants included patients and their caregivers at the Medical and Pharmaceutical University Hospital.

- Inclusion criteria: Caregivers and patients aged 18 years and older, who were able to read and write, and who agreed to participate in the study.

- Exclusion criteria: Patients and caregivers who were unable to communicate or who had impaired cognitive and perceptual abilities.

2.2. Study time and location

- Study location: Medical and Pharmaceutical University Hospital

- Study duration: The study was conducted from January 2026 to March 2026

2.3. Research methodology

+ Study design: This is a cross-sectional descriptive study.

+ Sample size and sampling method:

The study's sample size is based on the sample size calculation formula for descriptive studies.

$$n = Z^2_{1-\alpha/2} \frac{p(1-p)}{d^2}$$

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In which:

n: minimum sample size for the study.

z: confidence coefficient at 95% probability = 1.96, α: confidence level 95%.

d: allowable error in this study, d = 0.05.

p: prevalence of depression among caregivers of stroke patients, 26.6% (3), so p = 0.266.

Using the formula above, the calculated sample size is n = 300. Adding 10% to account for potential error, the final sample size is n = 330. In fact, we collected 330 inpatients and their caregivers in the study.

2.4. Instruments

The survey instrument consisted of two components: (1) characteristics of patients and caregivers, and (2) the level of depressive symptoms among caregivers, assessed using the Patient Health Questionnaire-9 (PHQ-9)(6),(7). The PHQ-9 is one of the most widely used screening and severity assessment tools for depression worldwide. It was developed by Spitzer, Kroenke, and colleagues(6), based on the diagnostic criteria for depression in the DSM-5. In Vietnam, the PHQ-9 has been translated and utilized in numerous studies on mental health among community populations, students, and patients with chronic diseases, demonstrating good feasibility and high reliability(3,4). Among caregivers, the PHQ-9 is used to facilitate early detection of depressive symptoms that may arise from caregiving burden, psychological stress, or lack of social support, thereby enabling timely intervention by clinicians and researchers.

The instrument consists of 9 items corresponding to the nine core diagnostic criteria for major depressive disorder, assessing the frequency of symptoms over the past two weeks. Each item of the PHQ-9 is scored from 0 to 3, corresponding to the following frequency levels: 0 = Not at all, 1 = Several days, 2 = More than half the days, and 3 = Nearly every day. The total score ranges from 0 to 27.

2.5. Data collection process

- Step 1: Select study participants, including patients and caregivers, based on the predefined inclusion criteria.

- Step 2: Introduce the study objectives, significance, methodology, and participants' rights. If they agree to participate, participants sign the informed consent form and are instructed on how to take part in the study.

- Step 3: The researchers conduct face-to-face interviews with caregivers during the period in which they are providing care for hospitalized patients, as well as with the patients themselves. Each interview lasts approximately 10–20 minutes for caregivers and about 10 minutes for patients, conducted on weekdays at the University of Medicine and Pharmacy Hospital. In cases where eligible caregivers are not available for direct interviews, data are collected via telephone interviews.

2.6. Study variables

- Patient's medical condition: information about the diagnosis was collected from medical records.

- Variables related caregivers: age (3 groups: < 40 years old; 40-60 years old and >60 years old), educational level (4 groups: below high school, high school, intermediate/college, university or higher); occupation (6 groups: farmer, civil servant / public employee, retired, worker, business, other); place of residence (2 groups: rural, urban); marital status (2 groups: single/unmarried, married); health status (3 groups: normal, frequently fatigued, weak); relationship (6 groups: father/mother, spouse, sibling, child/grandchild, relative, hired caregiver); family economic status: (3 groups: poor, moderate, affluent); daily caregiving duration: (8 groups: 1 hour/day, 2 hours/day, 4 hours/day, 6 hours/day, 8 hours/day, 10 hours/day, 12 hours/day, > 12 hours/day).

- Depression: assessed using the PHQ-9 scale, with the total score calculated by summing the responses to all items(6). The score of the PHQ-9 scale of each participant was used to analyze. The depression severity was categorized according to the total score of the PHQ-9 scale as follows: 0–4: no depressive symptoms; 5–9: at risk of depression; 10–14: mild depression; 5–19: moderate depression; 20–27: severe depression (6,7). To identify associated factors with depression of caregivers, we use the outcome binary variable (depression: total score ≥10; no depression: total score <10).

2.7. Data management and analysis

After collection, the data were coded, entered, and analyzed using SPSS 20.0 software. The statistical methods used included descriptive statistics, calculation of percentages (%), mean ($\bar{x}$) and standard deviation (SD), comparison of proportions using the Chi-square test (χ^2), and Fisher's Exact Test when appropriate.

2.8. Ethical considerations

The study was approved by the Ethics Committee in Biomedical Research at the medical and pharmaceutical university hospital, approval number 612/BVĐHYD, on January 7, 2026.

3. RESULTS

3.1. General characteristics of study participants

Table 1. Anthropometric and socio-demographic characteristics of caregivers (n = 330)

Characteristics		Male		Female		Total		p
		n	%	n	%	n	%	
Age	≤ 40	28	40,6	41	59,4	69	20,9	0,465
	40 - ≤ 60	77	42,3	105	57,7	182	55,2	
	> 60	27	34,2	52	65,8	79	23,9	
	Total	132	40,0	198	60,0	330	100	
	$\bar{X}$ ± SD	51,0 ± 12,6		51,4 ± 12,8		51,2 ± 12,7		0,948

Characteristics		Male		Female		Total		p
		n	%	n	%	n	%	
Educational Level	< Below High School	18	29,0	44	71,0	62	18,8	0,191
	High School	49	43,8	63	56,2	112	33,9	
	Intermediate/College	5	31,2	11	68,8	16	4,8	
	University or Higher	60	42,9	80	57,1	140	42,4	
Occupation	Farmer	18	32,1	38	67,9	56	17,0	0,587
	Civil Servant / Public Employee	28	36,4	49	63,6	77	23,3	
	Retired	28	48,3	30	51,7	58	17,6	
	Worker	16	43,2	21	56,8	37	11,2	
	Business	16	41,0	23	59,0	39	11,8	
	Other	26	41,3	37	58,7	63	19,1	
Place of Residence	Rural	31	43,1	41	56,9	72	21,8	0,549
	Urban	101	39,1	157	60,9	258	78,2	
Marital Status	Single / Unmarried	17	44,7	21	55,3	38	11,5	0,526
	Married	115	39,4	177	60,6	292	88,5	
Health Status	Normal	116	40,7	169	59,3	285	86,4	0,743
	Frequently Fatigued	13	37,1	22	62,9	35	10,6	
	weak	3	30,0	7	70,0	10	3,0	
Relationship	Father/Mother	57	45,6	68	54,4	125	37,9	0,075
	Spouse	43	41,7	60	58,3	103	31,2	
	Sibling	7	43,8	9	56,2	16	4,8	
	Child/Grandchild	20	31,7	43	68,3	63	19,1	
	Relative	4	44,4	5	55,6	9	2,7	
	Hired Caregiver	1	7,1	13	92,9	14	4,2	
Family Economic Status	Poor	18	32,7	37	67,3	55	16,7	0,404
	Moderate	104	40,9	150	59,1	254	77,0	
	Affluent	10	47,6	11	52,4	21	6,4	
Daily Caregiving Duration	1 hour/day	25	52,1	23	47,9	48	14,5	0,182
	2 hours/day	13	35,1	24	64,9	37	11,2	
	4 hours/day	5	35,7	9	64,9	14	4,2	
	6 hours/day	5	35,7	9	64,9	14	4,2	
	8 hours/day	2	13,3	13	86,7	15	4,5	
	10 hours/day	9	13,3	7	43,8	16	4,8	
	12 hours/day	38	37,3	64	62,7	102	30,9	
	> 12 hours/day	35	41,7	49	58,3	84	25,5	

The mean age of caregivers was 51.2 ± 12.7 years, and the age group 40–≤60 years accounted for the highest proportion (55.2%). The majority of caregivers were female (60%), had an educational level of university or higher (42.4%), and were employed as civil servants/ public employees (23.3%). Most caregivers were married, lived in urban areas (78.2%), were the children of the patients (37.9%), and had a family economic status of adequate/moderate (77%). Caregivers with a frequently fatigued health status accounted for 10.6%, and those providing 12 hours/day of caregiving represented the highest proportion (30.9%).

3.2. Depression among caregivers participating in the study

Table 2. Depression severity of caregivers assessed by the PHQ-9 Scale (n = 330)

Depression severity		n	%	
No	No depression	161	48,8	71,5
	At risk of depression	75	22,7	
Yes	Mild depression	32	9,7	28,5
	Moderate depression	32	9,7	
	Severe depression	30	9,1	
Total		330	100	
X̄ ± SD; Max - Min		7,5 ± 7,2; 0 - 27		

Among the 330 caregivers, 48.8% (161 individuals) had no signs of depression. However, a considerable proportion of caregivers exhibited various levels of depression. Specifically, 22.7% (75 individuals) were at risk of depression, 9.7% (32 individuals) had mild depression, 9.7% (32 individuals) had moderate depression, and 9.1% (30 individuals) had severe depression. The mean depression score of caregivers was 7.5 ± 7.2 points, ranging from 0 to 27 points.

3.3. General characteristics of patients and the relation with caregivers' depression

The disease distribution of patients was shown in Figure 1, and the relationship with the caregivers' depression was shown in Table 3.

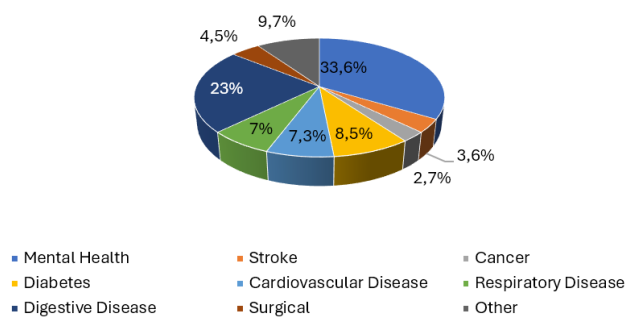


Figure 1. Classification of patients' diseases (n = 330)

Among the 330 patients analyzed in the study, those with mental health disorders accounted for the highest proportion (33.6%). This group also generally has the greatest need for family support and caregiving.

Table 3. Depression among caregivers according to patients' diseases (n = 330)

Patients' disease	Depression of caregivers				p
	No		Yes		
	n	%	n	%	
Mental health	48	43,2	63	56,8	0,000
Stroke	9	75,0	3	25,0	0,104
Cancer	6	66,7	3	33,3	0,047
Diabetes	26	92,9	2	7,1	0,890
Cardiovascular Disease	22	91,7	2	8,3	0,765
Respiratory Disease	20	87,0	3	13,0	0,397
Digestive Disease	63	82,9	13	17,1	0,153
Surgical	12	80,0	2	20,0	0,175
Other	30	93,8	2	6,2	0,315

p-values were obtained from the chi-square test or Fisher's exact test.

The results showed that the depression rates of caregivers varied significantly according to the patients' disease groups. Caregivers of patients with mental health disorders had the highest depression rate (56.8%), cancer (33,3%), and caregivers of patients with stroke/cerebrovascular disease (25%).

3.4. Associated factors with the depression of caregivers

Table 4. Depression according to the anthropometric and sociodemographic characteristics of caregivers (n = 330)

Characteristics		Depression				p
		No		Yes		
		n	%	n	%	
Age	≤ 40	52	75,4	17	24,6	0,397
	40 - ≤ 60	132	72,5	50	27,5	
	> 60	52	65,8	27	34,2	
Educational Level	< Below High School	40	64,5	22	35,5	0,060
	High School	75	67,0	37	33,0	
	Intermediate/College	10	62,5	6	37,5	
	University or Higher	111	79,3	29	20,7	

Characteristics		Depression				p
		No		Yes		
		n	%	n	%	
Occupation	Farmer	31	55,4	25	44,6	0,046
	Civil Servant / Public Employee	62	80,5	15	19,5	
	Retired	43	74,1	15	25,9	
	Worker	25	67,6	12	32,4	
	Business	30	76,9	9	23,1	
	Other	45	71,4	18	28,6	
Place of Residence	Rural	33	45,8	39	54,2	<0,001
	Urban	203	78,7	55	21,3	
Sex	Male	88	66,7	44	33,3	0,111
	Female	148	74,7	50	25,3	
Marital Status	Single / Unmarried	23	60,5	15	39,5	0,111
	Married	213	72,9	79	27,1	
Health Status	Normal	213	74,7	72	25,3	0,002
	Frequently Fatigued	16	45,7	19	54,3	
	weak	7	70,0	3	30,0	
Relationship	Father/Mother	98	78,4	27	21,6	0,261
	Spouse	73	70,9	30	29,1	
	Sibling	11	68,8	5	31,2	
	Child/Grandchild	40	63,5	23	36,5	
	Relative	6	66,7	3	33,3	
	Hired Caregiver	8	57,1	6	42,9	
Family Economic Status	Poor	33	60,0	22	40,0	0,025
	Moderate	184	72,4	70	27,6	
	Affluent	19	90,5	2	9,5	
Daily Caregiving Duration	1 hour/day	40	83,3	8	16,7	0,012
	2 hour/day	28	75,7	9	24,3	
	4 hour/day	11	78,6	3	21,4	
	6 hour/day	11	78,6	3	21,4	
	8 hour/day	14	93,3	1	6,7	
	10 hour/day	12	75,0	4	25,0	
	12 hour/day	73	71,6	29	28,4	
	> 12 hour/day	47	56,0	37	44,0	

p-values were obtained from the chi-square test or Fisher's exact test.

The highest depression rate was observed among caregivers over 60 years old (34.2%), but the difference was not significant. The education level, gender, marital status, and the relation with the patients also not related to depression of the caregivers (p>0.05). By occupation, farmers had a higher depression rate compared to other groups (44.6%). Caregivers living in rural areas had a depression rate of 54.2%, higher than those in urban areas (21.3%), and this difference was statistically significant ($p < 0.01$). Caregivers with a frequently fatigued health status were at higher risk of depression, accounting for 54.3% ($p < 0.05$). Caregivers from families with poor economic conditions had a depression rate of 40%, and this difference was statistically significant ($p < 0.05$). The longer the daily caregiving duration (>12 hours/day), the higher the rate of depression, recorded at 44% ($p < 0.05$).

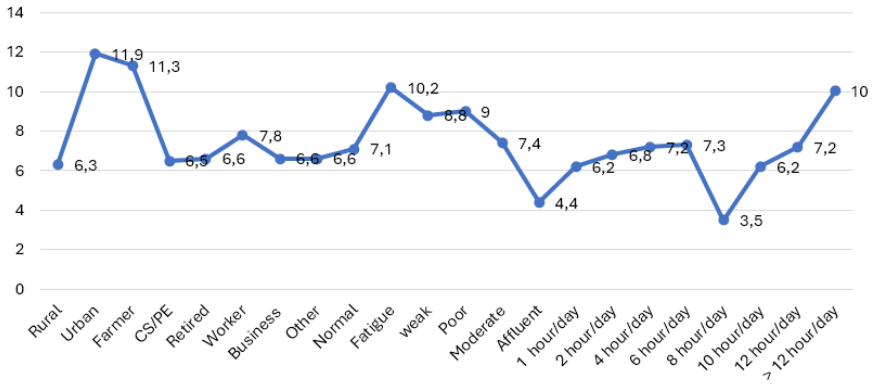


Figure 2. Mean PHQ-9 scores by caregiver characteristics (n=330)

The illustration shows that increased depression levels were significantly prevalent among caregivers with lower socioeconomic status, poor health, extended caregiving duration, and rural residency.

4. DISCUSSION

4.1. General characteristics of caregivers

The mean age of caregivers was 51.2 ± 12.7 years, similar to previous studies by Nguyen Thanh Binh (53.75 ± 15.58 years) [8] and Liu (57.1 ± 10.1 years)[9], but higher than the study by Ly Thuy Dan Phuong (45.7 ± 12.4 years)[3]. The majority of caregivers were female, consistent with prior studies reporting female proportions of 68.2% [3] and 65.6% [8], but differing from Nguyen Thanh Binh's study, where males were more prevalent than females (53.8% vs. 46.2%)[8].

In our study, within the older age group (>60 years), the predominance of females indicates that some elderly individuals continue to assume caregiving roles. This group is particularly vulnerable due to physical health decline, while still facing the demands and pressures of caregiving.

Most caregivers were married, which is consistent with the general population structure, where the majority of individuals live in a marital relationship, and aligns with the findings of Nguyen Thanh Binh, reporting 77.3%[3] and 78.8%[8], respectively. In Vietnam, parents usually live with their children, and children often act as the primary caregivers, making decisions regarding care and treatment for their parents. Our results are similar to those reported by Ly Thuy Dan Phuong (69.5%) [3] and Nguyen Thanh Binh (30.8%)[8].

Most caregivers self-assessed their personal and family economic status as adequate/moderate (77%), which is consistent with Ly Thuy Dan Phuong's study (79.8%) [3]. This indicates that, despite limited income, many families strive to balance expenses to meet caregiving needs. However, providing long-term care can reduce work capacity and generate additional medical costs, thereby affecting family finances and increasing pressure on caregivers.

Caregivers with normal health status accounted for the highest proportion (86.4%), followed by those who were frequently fatigued (10.6%), which differs from a previous study reporting 53% of caregivers having one or more physical health conditions[10]. This suggests that, although many caregivers self-report their health as normal, they remain at risk of physical and psychological health problems during long-term caregiving.

4.2. Depression among caregivers

Among the 330 caregivers, 22.7% were at risk of depression, 9.7% had mild depression, 9.7% had moderate depression, and 9.1% had severe depression. Thus, the proportion of caregivers exhibiting depressive symptoms at various levels is considerable, highlighting that caregivers' mental health remains an important concern. However, these results are lower than those reported in some previous studies. A study on primary caregivers by Nguyen Thanh Binh found a 30.8% prevalence of depressive symptoms, with 19.2% mild and 11.6% moderate depression [8].Additionally, a study on caregivers of children with leukemia showed much higher depression rates: 18.9% mild, 36.7% moderate, 27.8% severe, and 16.7% extreme depression[11]. Similarly, another study reported a 35.9% prevalence of depression among caregivers[12].

Caregivers often have to perform unpaid caregiving roles while simultaneously facing occupational pressures or even having to leave their jobs. This increases psychological burden and the risk of depression. In our study, caregivers who were farmers had higher depression rates compared to other occupational groups. This finding is consistent with Aoife O'Neill (2021), who studied 11,177 caregivers and found that unemployed caregivers had a significantly higher risk of depression than those who were still working (OR = 1.77; 95% CI: 1.54–2.03), indicating that occupational status plays an important role in caregivers' mental health [13].

Our study also found that financial difficulties increased depression among caregivers. Low income, high caregiving costs, reduced work capacity, and lack of financial support all contribute to psychological burden. This is consistent with a study on over 21,000 older caregivers, which showed that low-income caregivers spent more time caregiving and were at higher risk of depressive symptoms compared to high-income caregivers, demonstrating that economic inequality exacerbates caregiving burden and depression [14].

The results in Table 3.3 show that caregivers' depression rates varied according to the patients' disease groups. Caregivers of patients with mental health disorders had the highest depression rate (56.8%). This may be due to the chronic and recurrent nature of psychiatric disorders, patients' high dependency on caregivers, and the possible emergence of difficult-to-manage behaviors, which increase psychological and emotional burden. Our findings are consistent with Yao (2024), who reported that 53.5% of 1,224 informal caregivers of patients with mental illness in China experienced moderate-to-severe depression[15].

In our study, caregivers of cancer patients had a depression rate of 33.3%, higher than other disease groups. This may relate to the severity of the disease, prolonged treatment duration, concerns about prognosis, and treatment costs. A 2022 meta-analysis of 85 studies involving over 23,000 caregivers of cancer patients reported a mean depression prevalence of approximately 25%[16].

Stroke patients often experience mobility limitations, functional decline, and dependency in daily activities, leading to prolonged caregiving and increased caregiver burden. Wan Ab Rahman (2024) reported that 18.5% of informal caregivers of stroke patients in urban areas experienced depression[17], our study found a prevalence of 25%. Differences between studies may be explained by variations in study populations, timing, and locations. In our study, caregivers may have been caring for patients in a stable phase with low dependency, which could explain the relatively lower depression rate observed.

The study results indicate that depression rates among caregivers were higher when patients had greater dependency, longer caregiving duration, and higher psychological demands, such as in mental health disorders, cancer, and stroke. This is consistent with previous studies showing that patient dependency and caregiving burden are significant factors increasing the risk of depression among caregivers. These findings highlight the need for early screening, psychological counseling, and caregiver support, particularly for patients requiring long-term care, to reduce psychological burden and improve both caregiver and patient quality of life.

5. CONCLUSION

Among the 330 caregivers, 22.7% were at risk of depression, 9.7% had mild to moderate depression, and 9.1% had severe depression. These findings indicate that depression is relatively common among caregivers, highlighting the need for enhanced mental health screening, counseling, and appropriate support interventions. Healthcare providers should strengthen education and counseling on early signs of depression and encourage family support to reduce caregiving burden and improve caregivers' quality of life.

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