

# Prevalence of generalized anxiety disorder and major depression in health-care givers of disabled patients in Majmaah and Shaqra cities, Kingdom of Saudi Arabia

Mansour Alzahrani<sup>1</sup>,  
Fahad Alfahaid<sup>1</sup>,  
Mohammed Almansour<sup>1</sup>,  
Talal Alghamdi<sup>1</sup>,  
Tahir Ansari<sup>1</sup>, Waqas Sami<sup>2</sup>,  
Talal Mislal Al Otaibi<sup>3</sup>,  
Abdulmohsen Abdullah  
Al Humayn<sup>3</sup>,  
Madullah Moutlaq Al Enezi<sup>3</sup>

<sup>1</sup>Department of Family Medicine, College of Medicine, Majmaah University, Kingdom of Saudi Arabia, <sup>2</sup>Department of Public Health and Community Medicine, College of Medicine, Majmaah University, Kingdom of Saudi Arabia, <sup>3</sup>Medical Students, College of Medicine, Majmaah University, Kingdom of Saudi Arabia.

#### Address for correspondence:

Dr. Manzour Alzahrani, Department of Family Medicine, College of Medicine, Majmaah University, Kingdom of Saudi Arabia.  
Phone: 00966-500628086.  
E-mail: m.alzahrani@mu.edu.sa

WEBSITE: [ijhs.org.sa](http://ijhs.org.sa)

ISSN: 1658-3639

PUBLISHER: Qassim University

## ABSTRACT

**Introduction:** Anxiety is an emotion characterized by feelings of tension, worried thoughts, and physical changes such as increased blood pressure, etc. The impact of anxiety and depression on health-caregivers of disabled patients are very important because these psychological disorders effects both the health-caregivers and the patients which lead to unexpected bad events.

**Objectives:** The current study was aimed to find out the prevalence of generalized anxiety disorder and major depression in health-care givers of disabled patients and to observe associations between demographic characteristics and psychological disorders in Majmaah and Shaqra Cities, Kingdom of Saudi Arabia.

**Methods:** A cross-sectional community-based study was conducted in rehabilitation centers at Majmaah and Shaqra Cities. The data comprising 100 health-care givers was collected from February to April 2015 through complete enumeration sampling method. A pre-validated “general health quality questionnaire” was used to collect the data.

**Results:** Majority of the participants were male ( $n = 75$ , 75%). More than 50% of the participants were holding bachelors’ degree. Almost three-fifths of the participants had monthly income between 5000 and 15,000 SAR. The prevalence of somatic disorder was only (2%), anxiety disorder (3%), and depression (1%). However, in psychosocial and stress, the prevalence was (8%), respectively. No significant association was observed between demographic characteristics (nationality, gender, marital status, educational level, occupation, and income) and psychological disorders (somatic, anxiety, psychosocial, depression, and stress)  $P > 0.05$ , respectively.

**Conclusion:** The prevalence of psychological disorders was very low. Nationality, gender, marital status, educational level, occupation, and income were not significantly associated with psychological disorders.

**Keywords:** Anxiety, depression, health-care givers, psychosocial, somatic, stress

## Introduction

Anxiety is an emotion characterized by feelings of tension, worried thoughts, and physical changes such as increased blood pressure. People with anxiety disorders usually have recurring intrusive thoughts or concerns. They may also have physical symptoms such as sweating, trembling, dizziness, or a rapid heartbeat.<sup>1</sup> Its types are panic disorder, social anxiety disorder, specific phobias, and generalized anxiety disorder.<sup>2</sup> Depression is a common mental disorder, characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness, and poor concentration.<sup>3</sup> Depression can be long lasting or recurrent, substantially impairing an individual’s ability to

function at work or school or cope with daily life.<sup>4</sup> Most severe, depression can lead to suicide. Specialized care is needed for those with complicated depression or for those who do not respond to first-line treatments.<sup>5</sup> The types of depression include major depression, persistent depressive disorder, bipolar disorder, seasonal affective disorder, psychotic depression, postpartum depression, premenstrual dysphoric disorder, situational depression, and atypical depression.<sup>6,7</sup> Disabilities are an umbrella term, covering impairments, activity limitations, and participation restrictions.<sup>8</sup> People with disabilities have the same health needs as non-disabled people – for immunization, cancer screening, etc.<sup>9</sup> They also may experience a narrower margin of health, both because of poverty and social exclusion, and also because they may be

vulnerable to secondary conditions, such as pressure sores or urinary tract infections.<sup>10</sup> Evidence suggests that people with disabilities face barriers in accessing the health and rehabilitation services, they need in many settings.<sup>11</sup> According to California Pacific Medical Center, patients with disabilities should have the same access to all facilities and services as given to patients without disabilities. The services include accessible parking, accessible shuttle service, accessible entrances, assistance for people who are deaf or hard of hearing, blind or have visual impairments, and who have speech impairments.<sup>12,13</sup> In general, the prevalence of major depression is high in health-care givers of individuals with disabilities.<sup>14</sup> According to the study conducted in 2003,<sup>15</sup> the severity of disability in patients was directly correlated with increased risk of health-care givers depression. The prevalence of health-care givers depression increased with the degree of visual impairment from 16% in the 20/200 group to 48% in the no light perception group. According to the study, the severity of disability in patients was directly correlated with increased risk of health-care givers depression.<sup>15</sup> Women are generally more depressed than men, but no major differences in the extent of depression were found in those who cared for more impaired persons.<sup>16</sup> According to a study, the prevalence of major depression was high in health-care givers of individuals with brain injuries.<sup>17</sup> According to another study conducted about depression in health-care givers of patients with dementia found that thirty-two percent of health-care givers reported 6 or more symptoms of depression.<sup>18</sup> A study conducted in 2013 revealed that the prevalence of depression in caregivers was high Parkinson's disease 46%, Spinocerebellar degeneration 42%, multiple system atrophy 63%, and Amyotrophic lateral sclerosis 61%.<sup>19</sup>

Therefore, we planned this study to find the prevalence of generalized anxiety disorder and major depression in health-care givers of disabled patients and to observe associations between demographic characteristics and psychological disorders in Majmaah and Shaqra Cities, kingdom of Saudi Arabia.

## Materials and Methods

It was a cross-sectional study by design. The data were collected from January to March 2015 using convenient sampling method. A total of 100 health-care givers (doctors, nurses, psychologists, physiotherapists, and social workers) were interviewed during this period. The study was conducted at rehabilitation centers at Majmaah and Shaqra Cities. Almajmaah City which lies to the north of Riyadh City and is considered as one of Al-Riyadh Province Governorates. Whereas, Shaqra is located northwest of the capital Riyadh. The data were collected using the general health questionnaire (GHQ-28), which was a self-administered screening instrument, designed to detect the current anxiety and depression disorders. The GHQ-28 item version was

introduced incorporating the four subscales of somatic, anxiety, social dysfunctions, and severe depressive symptoms.<sup>21</sup> Each question had four responses. The participants' answers were scored as 0-0-1-1 based on their responses. The total score was determined by adding the score obtained for each answer in the questionnaire. Compared to other short versions of the GHQ (12 and 30), the 28-item version was found to be best in sensitivity (100%), specificity (81.9%), and overall misclassification rate (17.5%). The GHQ-28 was translated into Arabic language and validated in pilot study.<sup>22</sup> The Cronbach alpha was 0.71. The questionnaire comprised two sections: The first part was about the sociodemographic characteristics, and the second part related to GHQ-28. The data were entered and analyzed using SPSS 23.0. Mean  $\pm$  standard deviation was given for quantitative variables. Frequencies and percentages were given for qualitative variables. Pearson Chi-square was applied to observe associations between qualitative variables.  $P < 0.05$  was considered as statistically significant. The study was approved by the ethical committee of Majmaah University. The participant's consent was also obtained before filling the questionnaires.

## Results

The data were collected from 100 health-care givers, of which ( $n = 4$ , 4%) were physicians ( $n = 22$ , 22%) were social workers, ( $n = 23$ , 23%) were nurses, and a small percentage was psychologists (1%) and physiotherapists (6%), respectively. The mean age of the health-care givers was  $33.46 \pm 5.29$  years with around 6 years of experience in handling disabled patients. Majority of the participants were Saudis ( $n = 76$ , 76%) and ( $n = 24$ , 24%) were non-Saudis. One fourth of the participants were males. Almost 70% of the participants were married, and 25% were single. More than 50% of the participants were holding bachelors' degree, almost one-quarter of the participants were holding diploma and secondary school certificates respectively, and only 2% were having Masters/Ph.D. degrees. More than 71% of the participants had monthly income between 5000 and 15,000 SAR (Table 1).

As stated earlier, the GHQ-28 item version was used. It is further divided into four subscales: Somatic, anxiety, social dysfunctions, and severe depressive. Each question in the subscale had four responses. Table 2 show that majority of health-care givers had no somatic disorders ( $n = 98$ , 98%), ( $n = 97$ , 97%) had no anxiety disorders, ( $n = 92$ , 92%) had no psychosocial disorders, ( $n = 99$ , 99%) had no depression disorders, and finally, ( $n = 92$ , 92%) had no stress disorders.

Table 3 shows associations between sub-scales (somatic, anxiety, social dysfunctions, and severe depressive) and sociodemographic characteristics. No significant association was observed between somatic disorders and gender ( $P = 0.409$ ), marital status ( $P = 0.659$ ), education level

**Table 1:** Sociodemographic data of health-care givers

Sociodemographic data	n=100 (%)
Age (Mean±SD)	33.46±5.290
Years of experience (Mean±SD)	6.05±3.494
Gender	
Male	75 (75.0)
Female	25 (25.0)
Nationality	
Saudi	76 (76.0)
Non-Saudi	24 (24.0)
Education level	
Secondary school	20 (20.0)
Diploma	23 (23.0)
Bachelor	55 (55.0)
Master/Ph.D.	2 (2.00)
Marital status	
Married	71 (71.0)
Single	25 (25.0)
Widowed	0 (0.00)
Divorced	2 (2.00)
Occupation	
Physician	4 (4.00)
Social work	22 (22.0)
Psychologist	1 (1.00)
Nurse	23 (23.0)
Physiotherapy	6 (6.00)
Other	44 (44.0)
Income	
<5000 SAR	20 (20.0)
5001-10000 SAR	35 (35.0)
10001-15000 SAR	39 (39.0)
>15000 SAR	6 (6.00)

SD: Standard deviation

( $P = 0.644$ ), occupation ( $P = 0.204$ ), income ( $P = 0.363$ ), and nationality ( $P = 0.422$ ). Similarly, no significant association was observed between anxiety disorders and gender ( $P = 0.091$ ), marital status ( $P = 0.897$ ), education level ( $P = 0.825$ ), occupation ( $P = 0.487$ ), income ( $P = 0.184$ ), and nationality ( $P = 0.323$ ). Psychosocial disorders when associated with sociodemographic characteristics, no significant association was observed between gender ( $P = 0.395$ ), marital status ( $P = 0.344$ ), education level ( $P = 0.405$ ), occupation ( $P = 0.792$ ), income ( $P = 0.126$ ) and nationality ( $P = 0.097$ ). Similarly, depression was also not significantly associated with gender ( $P = 0.562$ ), marital status ( $P = 0.220$ ), education level ( $P = 0.257$ ), occupation ( $P = 0.936$ ), income ( $P = 0.261$ ), and nationality ( $P = 0.572$ ). In addition to it, again, no significant association was observed between stress and gender ( $P = 0.089$ ), marital status ( $P = 0.914$ ), education level ( $P = 0.443$ ), occupation ( $P = 0.106$ ), income ( $P = 0.945$ ), and nationality ( $P = 0.241$ ).

## Discussion

The current study was aimed to find the prevalence of generalized anxiety disorder and major depression in health-care givers of disabled patients and to observe associations between demographic characteristics and psychological disorders in Majmaah and Shaqra Cities, Kingdom of Saudi Arabia. In our study, the prevalence of somatic disorder was only 2%, anxiety disorder was positive in 3% participants, whereas, the prevalence of depression was only 1%; however, psychosocial disorder and stress were prevalent in 8% participants, respectively.

We also compared our research findings with already published literature. Our anxiety disorder results (3%) are consistent with prior studies that studied stress and anxiety in health-care givers. Hoffman *et al.*,<sup>19</sup> studied 229 breast cancer patients with mental disability comparing mindfulness-based stress reduction (MBSR) technique. Those using MBSR showed decreased mood disturbance and lower levels of anxiety, depression, anger, and fatigue. Another study carried out by Lengacher *et al.*<sup>21</sup> found that caregivers of terminally ill cancer patients reported decreased depressive symptoms, anxiety, and fear of recurrence. In our study, depression was prevalent in only 1% of the respondents. The most serious problem concerning the large number of caregivers that consistently suffer from anxiety and depression is that this situation stems from the overwhelming responsibilities related to the role that they cover.<sup>22</sup> According to the study conducted by Braich *et al.*<sup>23</sup> found that 47% of the health-care givers experienced depression who were treating patients with blindness, however, in our study, depression was prevalent in only 1% of the participants. Another study conducted by Basher *et al.*<sup>24</sup> reported that somatic and anxiety was present in 27% and 32% respondents who were handling mentally ill patients. In our study, somatic and anxiety disorders were positive in only 2% and 3% of the participants, respectively. According to another study conducted in Japan<sup>25</sup> reported that psychosocial disorders were found in 38% health-care givers working with patients having brain injuries, however, in the present study psychosocial disorders were positive in only 8% participants.

Some studies reported relationship of depression with female gender and duration of care giving more than 18 months, however, in our study, no significant association was observed between gender, duration of care and depression.<sup>26</sup> A study from Pakistan reported that 40% caregivers are at risk of developing depression and anxiety.<sup>27</sup> Similar findings were observed in a follow-up study where depression was present in 40% of the caregivers.<sup>28</sup> Whereas, in our study, depression and anxiety were collectively present in 4% of the participants. The subjective, objective and economic consequences of caregiving and their relationship with distress in the caregivers are established facts for long. In the recent years, there have been concerns about the association of caregivers' psychosocial

resources and socio-demographic variables with family burden and stress.<sup>29</sup> In our study, none of the socio-demographic characteristics were significantly associated with psychological disorders.

**Table 2:** Prevalence of psychological disorders in health-care givers

Psychological disorders	Positive (%)	Negative (%)
Somatic	2 (2.0)	98 (98.0)
Anxiety	3 (3.0)	97 (97.0)
Psychosocial	8 (8.0)	92 (92.0)
Depression	1 (1.0)	99 (99.0)
Stress	8 (8.0)	92 (92.0)

## Limitations of the study

This study has number of limitations; first, the sample size was very small. Future research may be conducted in cosmopolitan cities such as Riyadh, Jeddah, and Damman to ensure larger sample size for generalizability of results. Second, this study was conducted at two rehabilitation centers in Majmaah and Shaqra Cities, respectively; here, the patient turnout was not very high. Future research may be conducted by including various rehabilitation centers from major cities of Saudi Arabia. Finally, the numbers of healthcare providing staff in rehabilitation centers at both cities were less in number; this may be the reason that our results are not absolutely supporting/contradicting the literature.

**Table 3:** Associations between psychological disorders and sociodemographic characteristics

Socio-demographic characteristics	Somatic <i>n</i> (%)		Depression <i>n</i> (%)		Psychosocial <i>n</i> (%)		Depression <i>n</i> (%)		Stress <i>n</i> (%)	
	Negative	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative	Positive
Gender										
Male	73 (74.5)	2 (100)	74 (76.3)	1 (33.3)	68 (73.9)	7 (87.5)	74 (74.7)	1 (100)	71 (77.2)	4 (50)
Female	25 (25.5)	0 (0)	23 (23.7)	2 (66.7)	24 (26.1)	1 (12.5)	25 (25.3)	0 (0)	21 (22.8)	4 (50)
	<i>P</i> =0.409		<i>P</i> =0.091		<i>P</i> =0.395		<i>P</i> =0.562		<i>P</i> =0.089	
Marital status										
Married	69 (70.4)	2 (100)	69 (71.1)	2 (66.7)	65 (70.7)	6 (75)	71 (71.7)	0 (0)	65 (70.7)	6 (75)
Single	25 (25.5)	0 (0)	24 (24.7)	1 (33.3)	24 (26.1)	1 (12.5)	24 (24.2)	1 (100)	23 (25)	2 (25)
Divorced	4 (4.1)	0 (0)	4 (4.1)	0 (0)	3 (3.3)	1 (12.5)	4 (4)	0 (0)	4 (4.3)	0 (0)
	<i>P</i> =0.659		<i>P</i> =0.897		<i>P</i> =0.344		<i>P</i> =0.220		<i>P</i> =0.832	
Educational level										
Secondary School	20 (20.4)	0 (0)	20 (20.6)	0 (0)	18 (19.6)	2 (25)	19 (19.2)	1 (100)	19 (20.7)	1 (12.5)
Diploma	23 (23.5)	0 (0)	22 (22.7)	1 (33.3)	23 (25)	0 (0)	23 (23.2)	0 (0)	21 (22.8)	2 (25)
Bachelor	53 (54.1)	2 (100)	53 (54.6)	2 (66.7)	49 (53.3)	6 (75)	55 (55.6)	0 (0)	50 (54.3)	5 (62.5)
Master/Ph.D.	02 (2)	0 (0)	2 (2.1)	0 (0)	2 (2.2)	0 (0)	2 (2.2)	0 (0)	2 (2.2)	0 (0)
	<i>P</i> =0.644		<i>P</i> =0.825		<i>P</i> =0.405		<i>P</i> =0.257		<i>P</i> =0.914	
Occupation										
Physician	4 (4.1)	0 (0)	4 (4.1)	0 (0)	4 (4.3)	0 (0)	4 (4)	0 (0)	4 (4.3)	0 (0)
Social worker	20 (20.4)	2 (100)	21 (21.6)	1 (33.3)	19 (20.7)	3 (37.5)	22 (22.2)	0 (0)	18 (19.6)	4 (50)
Psychologist	1 (1)	0 (0)	1 (1)	0 (0)	1 (1.1)	0 (0)	1 (1)	0 (0)	1 (1.1)	0 (0)
Nurse	23 (23.5)	0 (0)	21 (21.6)	2 (66.7)	22 (23.9)	1 (12.5)	23 (23.2)	0 (0)	21 (22.8)	2 (25)
Physiotherapy	6 (6.1)	0 (0)	6 (6.2)	0 (0)	6 (6.5)	0 (0)	6 (6.1)	0 (0)	6 (6.5)	0 (0)
Other	44 (44.9)	0 (0)	44 (45.5)	0 (0)	40 (43.5)	4 (50)	43 (43.4)	1 (100)	42 (45.7)	2 (25)
	<i>P</i> =204		<i>P</i> =0.487		<i>P</i> =0.792		<i>P</i> =0.936		<i>P</i> =0.443	
Income										
<5000	20 (20.4)	0 (0)	20 (20.6)	0 (0)	19 (20.7)	1 (12.5)	19 (19.2)	1 (100)	17 (18.5)	3 (37.5)
5001-10000	35 (35.7)	0 (0)	35 (36.1)	0 (0)	33 (35.9)	2 (25)	35 (35.4)	0 (0)	35 (38)	0 (0)
10001-15000	37 (37.8)	2 (100)	36 (37.1)	3 (100)	36 (39.1)	3 (37.5)	39 (39.4)	0 (0)	34 (37)	5 (62.5)
>15000	6 (6.1)	0 (0)	6 (6.2)	0 (0)	4 (4.3)	2 (25)	6 (6.1)	0 (0)	6 (6.5)	0 (0)
	<i>P</i> =0.363		<i>P</i> =0.184		<i>P</i> =0.126		<i>P</i> =0.257		<i>P</i> =0.106	
Nationality										
Saudi	74 (75.5)	2 (100)	73 (75.3)	3 (100)	68 (73.9)	8 (100)	75 (75.8)	1 (100)	70 (76.1)	6 (75)
Non-Saudi	24 (24.5)	0 (0)	24 (24.7)	0 (0)	24 (26.1)	0 (0)	24 (24.2)	0 (0)	22 (23.9)	2 (25)
	<i>P</i> =0.644		<i>P</i> =0.323		<i>P</i> =0.097		<i>P</i> =0.572		<i>P</i> =0.945	

## Conclusion

The prevalence of psychological disorders (somatic, depression, anxiety, psychosocial and stress) was very low among health-care givers in Majmaah and Shaqra Cities. Based on our data, nationality, gender, marital status, educational level, occupation, and income were not significantly associated with psychological disorders.

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