



Prevalence and risk factors of anxiety and depression among patients with chronic diseases, Saudi Arabia

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ABSTRACT: A connection was found between chronic illnesses and psychological disorders leading to negative impact on health-related quality of life. This study assessed prevalence of anxiety and depression among chronic diseases patients in Saudi Arabia. A cross-sectional study was done on chronic diseases patients for ≥ 3 years using an online questionnaire. Data about patients' demographics, and medical information Arabic version of the hospital anxiety and depression scale (HADS) was used to assess the psychological well-being. Of participants, 59.4% had 41-60 years, 74.3% were males and 89.7% were married. The most common chronic diseases were hypertension (56.2%) and diabetes (47.6%). Of patients, 22.2% had depression and 27% had anxiety. Depression was significantly higher among participants aged 41-60 years, males, married, with secondary education or more, with 10 001-20 000 SR monthly income, having 4 chronic diseases, longer disease duration and sedentary lifestyle. Anxiety was significantly higher among participants aged 41-60 years, separated, with secondary education or more, employed, having 10 001-20 000 SR monthly income, overweight, and those with longer disease duration. A significant positive correlation was found between depression and anxiety scores and the number of chronic diseases. Mental health should be recognized as a core component of chronic disease management.

Keywords: risk, anxiety, depression, chronic, Saudi

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1. Introduction

With one or more chronic conditions, around half of the adult population must deal with a variety of everyday obstacles, including challenging symptoms, diminished independence, and daily self-management (Hajat and Stein., 2018). Compared to the general population, individuals with chronic illnesses are far more likely to experience anxiety and sadness as a result of these difficulties (Buchberger et al., 2016).

A combination of abnormal ideas, perceptions, emotions, actions, and interpersonal relationships are the hallmarks of mental disorders such as depression and anxiety, according to the World Health Organization (WHO., 2022).

Numerous studies have examined the connection between depression and chronic illnesses. There is a connection between depression and chronic illnesses, according to a meta-analysis of 40 cross-sectional studies (Read et al., 2027; Assari., 2014). And cohort studies have recently looked at the connection between baseline chronic illnesses and the occurrence of depression later on (Yang et al., 2020; Fei et al., 2016; Ren et al., 2021).

According to studies, psychological variables including stress, anxiety, and depression have a negative impact on patients' health-related quality of life when they have chronic illnesses (Doi et al., 2019; Liu et al., 2020). As a result, psychological issues are more common in patients with chronic illnesses than in those without them (Hwang and Oh., 2024).

In comparison to depression alone, the co-morbid state of depression and other chronic diseases gradually deteriorates health, and numerous studies have demonstrated that individuals with one or more chronic diseases are more likely to have significant depression (Clarke and Currie., 2009).

2. Theoretical Overview of the Main Concepts

Anxiety and despair were common among patients with diabetes and hypertension in Saudi Arabia (AlKhathami et al., 2017; Cho et al., 2018). Anxiety, depression, and common chronic diseases (hypertension, type 2 diabetes, dyslipidemia, and rheumatoid arthritis) were evaluated in a study conducted in Riyadh by Baghdadi et al., 2021. According to the study, 10.3% and 8.9% of patients had borderline abnormal anxiety and abnormal anxiety, respectively, and 17.7% and 8.9% had borderline abnormal depression. Additionally, patients with rheumatoid arthritis had four times the chance of developing depression, and there was a statistically significant correlation between the hospital anxiety and depression scale (HADS) score for borderline and abnormal anxiety and the presence of type 2 diabetes and dyslipidemia (Baghdadi et al., 2021).

This study aimed to assess the prevalence and risk factors of anxiety and depression among patients with common chronic diseases in Saudi Arabia.

3. Methodology

Study design, location and time: this is a cross-sectional study done in Saudi Arabia from....to...2025.

Study participants: the inclusion criteria will be patients aged ≥ 18 years, diagnosed with one of the chronic diseases (hypertension, type 2 diabetes, dyslipidemia, asthma, rheumatoid arthritis, cardiovascular diseases or cancer) for ≥ 3 years. The selected chronic diseases are based on previous Saudi studies on the most prevalent chronic diseases in Saudi Arabia (Baghdadi et al., 2021; Alzahrani et al., 2023). And the exclusion criteria will be patients already diagnosed with clinical depression or anxiety or currently taking antidepressants or anti-anxiety medications patients diagnosed with other psychiatric disorders, including schizophrenia and psychosis.

Sample size: The sample size was calculated using the Raosoft online calculator, with a margin of error of 5% and a confidence interval of 95%. With a postulated prevalence of 50%, a minimum sample size of 385 patients was calculated.

Data collection: Data will be gathered using an Arabic questionnaire that has already been created. Patient characteristics and sociodemographic information (age, gender, marital status, income, education, occupation, health insurance, height, weight, smoking status, alcohol use, and degree of physical activity) will be evaluated in the first section. The medical information pertaining to the chronic conditions will be evaluated in the second section. Additionally, the third segment will use the previously validated Arabic version of the HADS, a 14-item questionnaire translated into Arabic, to evaluate the psychological well-being of the patients (Baghdadi et al., 2021; Terkawi et al., 2017). It is divided into two sections: two questions about depression and seven questions about anxiety. An ordinal 4-point scale (0 being the lowest and 3 being the highest) can be used to respond to each question. To classify each patient's outcome, the sums of the points earned from the seven responses in each part were converted into a scoring system (normal = 0–7, borderline abnormal = 8–10, abnormal = 11–21). Patients were classified as having anxiety or depression, respectively, if they scored abnormally in either area (anxiety or depression, scores 11–21). The HADS scale (0–3) was used for scoring, with 0 denoting the lowest score and 3 denoting the highest level of anxiety and sadness. Subscale values were added together to determine final scoring. The range of results was 0 to 21. Three levels—normal (0–7), borderline (8–10), and abnormal (11–21)—were established based on the score count (Baghdadi et al., 2021; Terkawi et al., 2017).

Ethical considerations: An ethical approval for the study was obtained from the research ethics committee of ..., Saudi Arabia.

Data analysis: Data were statistically analyzed using the (SPSS) application version 26. To investigate the association between the variables, the Chi-squared test (χ^2) was applied to qualitative data that was expressed as numbers and percentages. The association between the quantitative non-parametric variables that were expressed as mean and standard deviation (Mean $\pm$ SD) was examined using the Kruskal Wallis test. Correlation analysis was performed using the Spearman's test. The statistical significance was defined as a p-value of less than 0.05 was considered statistically significant.

4. Discussion

The present study aimed to assess the prevalence and risk factors of anxiety and depression among patients with common chronic diseases in Saudi Arabia. This study demonstrates a notably high prevalence of depression (22.2%) and anxiety (27%) among individuals living with chronic diseases, underscoring the significant psychological burden in this population. These rates substantially exceed those reported in the general population both within Saudi Arabia and globally, reflecting a concerning mental health disparity linked to chronic illness (Alamri et al., 2020; WHO., 2014).

A cross-sectional study of Al Khobar's (Saudi Arabia) hypertensive and diabetic primary care patients showed that 48.7% of the participants had depression and 38.4% of the participants had anxiety (AlKhathami et al., 2017; Cho et al., 2018). And a cross-sectional study of hypertensive patients from Afghanistan showed the prevalence of anxiety and depression to be 42.3% and 58.1%, respectively (El Bcheraoui et al., 2013). These findings are consistent with existing national studies indicating a strong comorbidity between mental health disorders and chronic illnesses such as diabetes, hypertension, and rheumatoid arthritis in Saudi patients (AlKhathami et al., 2017; Baghdadi et al., 2021).

Several sociodemographic and lifestyle factors were significantly associated with higher rates of depression and anxiety. Individuals aged 41–60 years, males, married participants, those with higher educational attainment, and those in the mid-range income bracket were particularly affected. Moreover, overweight/obesity and a sedentary lifestyle were closely tied to elevated psychological distress. These findings are consistent with that observed in a study done in China, where higher prevalence of depression was reported among the elderly, due to being isolated and lonely with no family support (due to the 1-child policy), retirement, and subsequently a lower income (Liu et al., 2018).

These associated factors also agree with previous studies, where age, gender, marital status, monthly income, educational status which influence health literacy, access to health information, and self-management skills; the availability and quality of support from primary caretakers; social isolation or lack of social support; prolonged hospitalization or intensive care unit stays; the quality and quantity of social relationships; frequent hospital visits may disrupt daily routines which increase financial burden; permanent disabilities; and avoidance by the family or society and the lifestyle factors, such as physical activity (Cirelli et al., 2018; Tucker-Seeley et al., 2013; Kind et al., 2014; Hanspal et al., 2021).

Being older, female, underweight, and having lower education, and lower income were positively associated with depression among chronic diseases patients in the World Health Organization (WHO) Study on global AGEing and adult health (SAGE) Wave 1. This study was done on in six low- and middle-income countries (Lotfaliany et al., 2018).

The data reinforced the growing body of evidence indicating that individuals with chronic diseases face a substantially increased risk of mental health disorders (Read et al., 2017; Yang et al., 2020). Depression and anxiety have been linked not only to disease burden and complications but also to diminished health-related quality of life and poorer disease management outcomes (Doi et al., 2019; Liu et al., 2020). This bidirectional relationship creates a cyclical pattern in which chronic illness exacerbates mental health symptoms, which in turn hinder adherence to treatment and self-care behaviors.

The highlighted bidirectional relationship between mental health and chronic illnesses suggest that

addressing psychological well-being is essential in the context of managing chronic diseases. Furthermore, the presence of comorbidities may exacerbate stress and anxiety levels in individuals with chronic diseases. These findings underscore the importance of integrating mental healthcare into the overall management of chronic illnesses to improve patient outcomes and overall well-being (Swathi ET AL., 2023).

Notably, the association between obesity and poor mental health aligns with international literature suggesting that metabolic dysfunction and inflammatory pathways may mediate this relationship (Clarke and Currie, 2009). Similarly, physical inactivity has been repeatedly identified as a key modifiable risk factor contributing to both chronic physical and psychological illness (Hajat and Stein., 2018).

The prevalence of depression and anxiety in the current study was significantly higher among participants with longer disease duration. In particular, disease duration and severity appear to compound the risk of psychological distress. For example, individuals with long-standing conditions such as type 2 diabetes or cardiovascular diseases often experience cumulative stress, fear of complications, and reduced functional ability—all of which contribute to depressive and anxious symptomatology (Buchberger et al., 2016; Ren et al., 2021).

The observed gender differences in mental health outcomes, with males reporting higher rates of both depression and anxiety, deviate from global trends but may be culturally influenced. In some Middle Eastern societies, mental health stigma and masculine norms may discourage emotional expression, potentially leading to underdiagnosis in women or over-reporting among men seeking help for physical symptoms (Assari., 2014). Additionally, regional studies suggest that patients' perceptions of disease control and their coping mechanisms—particularly religious coping—play a significant role in moderating mental health outcomes (Terkawi et al., 2017; AlKhathami et al., 2017).

The findings of this study highlight an urgent need for integrated care models that address both physical and mental health in primary and chronic care settings. Screening tools such as the Arabic version of the Hospital Anxiety and Depression Scale (Terkawi et al., 2017) can facilitate early detection and intervention. Furthermore, promoting physical activity, weight management, and psychosocial support services could mitigate the dual burden of chronic disease and mental illness.

5. Synopsis of the Main Research Outcomes

Of the studied 397 participants, 59.4% had 41-60 years, 74.3% were males and 89.7% were married. The majority (81.1%) had a secondary educational level or more and 56.9% had a 10 001-20 000 SR monthly income. Almost one quarter of the participants were obese (25.2%) and 47.4% were overweight, with a mean BMI of 30 ± 11.3 kg/m².

(Table 2) demonstrates that the most common chronic diseases among the participants were HTN (56.2%), DM (47.6%), rheumatoid arthritis (24.7%) and cardiovascular diseases (21.2%). Most of the participants (62.5%) had a diseases duration more than 6 years and 21.9% were smokers. About 37% (37.8%) had health insurance and 34.8% had a sedentary life.

The mean depression score was 6.36 ± 4.05 and the mean anxiety score 4.45 ± 3.74 . Based on the HADS scores classification, 22.2% of the participants had depression (Abnormal (case)), while 27% had anxiety (abnormal (case)) (Figure 1 and 2).

(Table 3) demonstrates that the prevalence of depression was significantly higher among participants aged 41-60 years (53.4%), males (56.8%), married (84.1%), those with secondary educational level or more (79.5%), and those having 10 001-20 000 SR monthly income (45.5%) ($p < 0.05$).

(Table 4) shows that the prevalence of depression (Abnormal (case)) was significantly higher among participants having 4 chronic diseases (29.5%), longer disease duration (69.3%), and sedentary lifestyle (53.4%) ($p < 0.05$).

(Table 5) shows that the prevalence of anxiety was significantly higher among participants aged 41-60 years (49.5%), separated participants (79.4%), those with secondary educational level or more (79.4%),

employed (62.6%), and those having 10 001-20 000 SR monthly income (58.9%) and among overweight participants and those with higher mean BMI ($p < 0.05$).

(Table 6) shows that the prevalence of anxiety (Abnormal (case)) was significantly higher among participants having on chronic diseases (43%), and those having longer disease duration (56.1%) ($p < 0.05$).

(Figure 3 and 4) show that a significant positive correlation was found between both the depression and the anxiety scores and the number of chronic diseases ($r = 0.34$, $p\text{-value} = < 0.001$) and ($r = 0.25$, $p\text{-value} = < 0.001$) respectively.

(Figure 5) shows that a significant positive correlation was found between both the depression scores and the anxiety ($r = 0.26$, $p\text{-value} = < 0.001$).

6. Conclusions

This study revealed a high prevalence of depression and anxiety among individuals with chronic diseases in Saudi Arabia, significantly exceeding rates reported in the general population. Key sociodemographic factors—such as middle age, male gender, marital status, higher education, and middle income—were found to correlate with increased psychological distress, alongside modifiable lifestyle factors like obesity and physical inactivity. These findings emphasize the urgent need to recognize mental health as a core component of chronic disease management. The bidirectional relationship between chronic physical conditions and psychological disorders not only worsens patient outcomes but also strains healthcare systems through increased service utilization and decreased quality of life.

7. Limitations, Implications, and Further Directions of Research

A limitation of the present study was the usage of a self-reported questionnaire that could have a recall bias. Another limitation was the cross-sectional study design that could reveal the association between variables but not the casual relationships.

There is a need for integrating mental health screening into chronic disease care through routine screening for depression and anxiety in chronic disease management programs using validated tools such as the Arabic version of the Hospital Anxiety and Depression Scale (HADS). Interventions focusing on physical activity, weight management, and healthy dietary habits should be prioritized to mitigate both physical and psychological health risks among those patients.

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Table 1. Distribution of studied participants according to their demographic characters and BMI (no.: 397)

Variable	No. (%)
Age (years)	
Less than 30 years	17 (4.3)
31- 40	40 (10.1)
41-60	236 (59.4)
>60	104 (26.2)
Gender	
Female	102 (25.7)
Male	295 (74.3)
Marital status	
Married	356 (89.7)
Widowed	17 (4.3)
Divorced	8 (2)
Separated	16 (4)
Education level	
None	12 (3)
Elementary	14 (3.5)
Intermediate	37 (9.3)
Secondary or more	334 (84.1)
Employment	

Employed	285 (74.3)
Unemployed	102 (25.7)
Household income (Saudi Arabian Riyal/month)	
<5000	26 (6.5)
5001-10 000	63 (15.9)
10 001-20 000	226 (56.9)
>20 000	82 (20.7)
BMI	
Normal weight	109 (27.5)
Overweight	188 (47.4)
Obese	100 (25.2)
BMI (Mean SD) (kg/m²) (Mean ± SD)	30 ± 11.3

Table 2. Distribution of studied participants according to type of chronic diseases, disease duration, smoking status, health insurance and lifestyle (no.: 397)

Variable	No. (%)
Type of chronic disease	
Hypertension	223 (56.2)
Type 2 diabetes	189 (47.6)
Dyslipidemia	60 (15.1)
Asthma	46 (11.6)
Rheumatoid arthritis	98 (24.7)
Cardiovascular diseases	84 (21.2)
Cancer	10 (2.5)
Disease duration	
<3 years	87 (21.9)
3-6 years	62 (15.6)
>6 years	248 (62.5)
Smoking	
No	310 (78.1)
Yes	87 (21.9)
Health insurance	
No	247 (62.2)
Yes	150 (37.8)
Lifestyle	
Sedentary	138 (34.8)
< 1 h of moderate activity of work 81	51 (12.8)
1 h of moderate activity of work	64 (16.1)
> 1 h of moderate activity of work	144 (36.3)

Figure 1. Distribution of studied participants according to levels of depression (no.: 397)

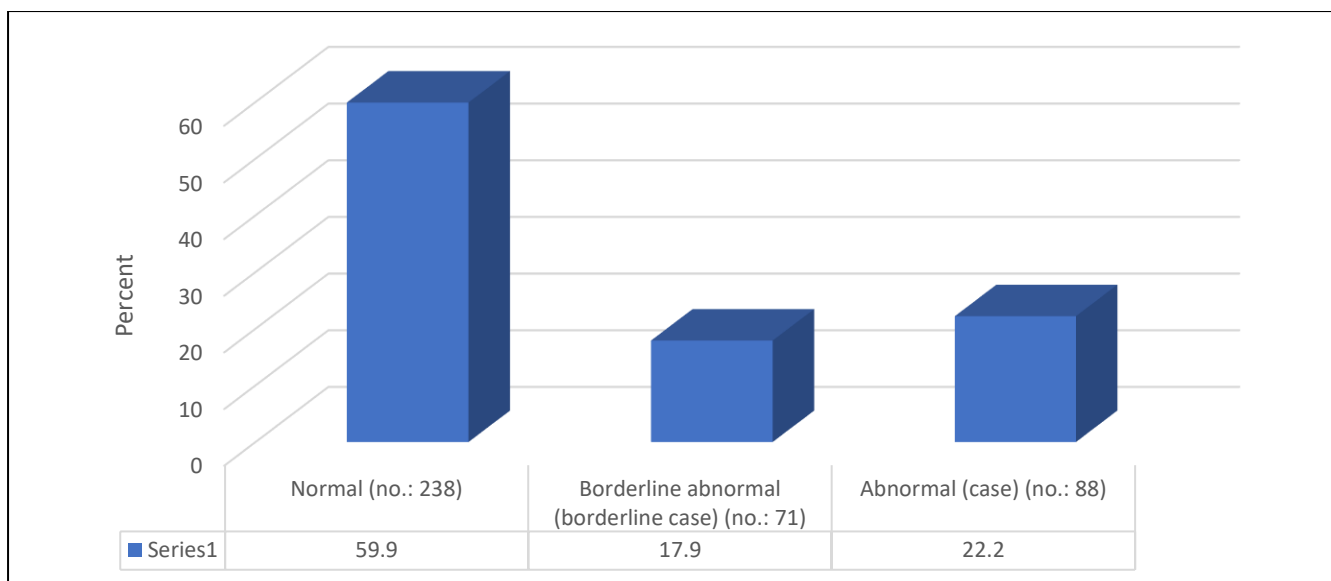


Figure 2. Distribution of studied participants according to levels of anxiety (no.: 397)

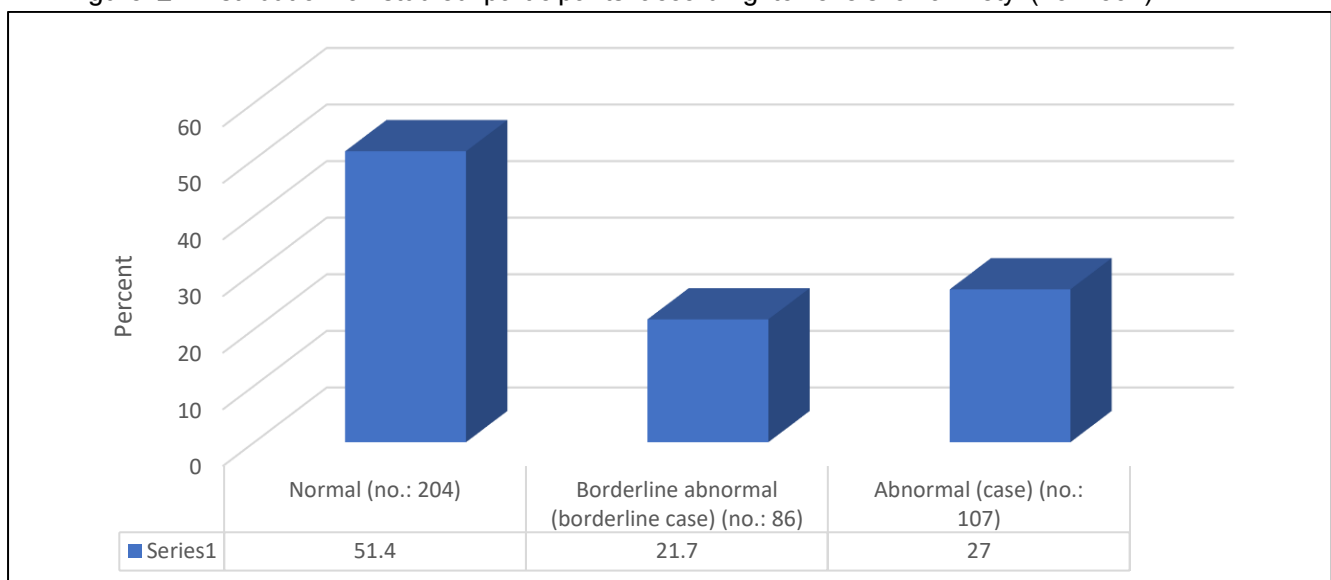


Table 3. Relationship between depression levels and participants' demographics and BMI (no.: 397)

Variable	Depression level			χ^2	p-value
	Normal No. (%)	Borderline abnormal (borderline case) No. (%)	Abnormal (case) No. (%)		
Age (years)					
Less than 30 years	11 (4.6)	2 (2.8)	4 (4.5)	14.62	0.023
31- 40	21 (8.8)	16 (16.9)	7 (8)		
41-60	156 (65.5)	33 (46.5)	47 (53.4)		

>60	50 (21)	24 (33.8)	30 (34.1)		
Gender					
Female	48 (20.2)	16 (22.5)	38 (43.2)	18.27	<0.001
Male	190 (79.8)	55 (77.5)	50 (56.8)		
Marital status					
Married	215 (90.3)	67 (94.4)	74 (84.1)	23.38	0.001
Widowed	6 (2.2)	0 (0.0)	11 (12.5)		
Divorced	6 (2.5)	0 (0.0)	2 (2.3)		
Separated	11 (4.6)	4 (5.6)	1 (1.1)		
Education level					
None	0 (0.0)	0 (0.0)	12 (13.6)	16.42	<0.001
Elementary	11 (4.6)	2 (2.8)	1 (1.1)		
Intermediate	25 (10.5)	7 (9.9)	5 (5.7)		
Secondary or more	202 (84.9)	62 (87.3)	79 (79.5)		
Employment					
Employed	185 (77.7)	47 (66.2)	63 (41.6)	4.24	0.12
Unemployed	53 (22.3)	24 (33.8)	25 (28.4)		
Monthly income (SR)					
<5000	9 (3.8)	0 (0.0)	17 (19.3)	18.97	<0.001
5001-10 000	46 (19.3)	7 (9.9)	10 (11.4)		
10 001-20 000	122 (51.3)	64 (90.1)	40 (45.5)		
>20 000	61 (25.6)	0 (0.0)	21 (23.9)		
BMI					
Normal weight	66 (27.7)	20 (28.2)	23 (26.1)	6.03	0.196
Overweight	111 (46.6)	40 (56.3)	37 (42)		
Obese	61 (25.6)	11 (15.5)	28 (31.8)		
BMI (Mean SD) (kg/m²) (Mean ± SD)	30 ± 13.06	28.17 ± 3.01	31.48 ± 10.19	0.55*	0.756

N.B.: * = Kruskal Wallis test

Table 4. Relationship between depression levels and number of chronic diseases, disease duration, smoking status, health insurance and lifestyle (no.: 397)

Variable	Depression level			χ^2	p-value
	Normal No. (%)	Borderline abnormal (borderline case) No. (%)	Abnormal (case) No. (%)		
Number of chronic diseases					
1	137	47 (66.2)	20 (22.7)	12.87	<0.001

	(57.6)				
2	77 (32.4)	4 (5.6)	19 (21.6)		
3	10 (4.2)	0 (0.0)	23 (26.1)		
4	14 (5.9)	20 (28.2)	26 (29.5)		
Disease duration					
<3 years	39 (16.4)	28 (39.4)	20 (22.7)	23.33	<0.001
3-6 years	42 (17.6)	13 (18.3)	7 (8)		
>6 years	157 (66)	30 (42.3)	61 (69.3)		
Smoking					
No	190 (79.8)	53 (74.6)	67 (76.1)	1.11	0.574
Yes	48 (20.2)	18 (25.4)	21 (23.9)		
Health insurance					
No	138 (58)	52 (73.2)	57 (64.8)	5.72	0.057
Yes	100 (42)	19 (26.8)	31 (35.2)		
Lifestyle					
Sedentary	77 (32.4)	14 (19.7)	47 (53.4)	19.08	<0.001
< 1 h of moderate activity of work 81	69 (29)	56 (78.9)	19 (21.6)		
1 h of moderate activity of work	46 (19.3)	1 (1.4)	17 (17.3)		
> 1 h of moderate activity of work	69 (29)	56 78.9)	19 (21.6)		

Table 5. Relationship between anxiety levels and participants' demographics and BMI (no.: 397)

Variable	Anxiety level			χ^2	p-value
	Normal No. (%)	Borderline abnormal (borderline case) No. (%)	Abnormal (case) No. (%)		
Age (years)					
Less than 30 years	9 (4.4)	5 (5.8)	3 (2.8)	13.6	<0.001
31- 40	12 (5.9)	18 (20.9)	10 (9.3)		
41-60	144 (70.6)	39 (45.3)	53 (49.5)		
>60	39 (19.1)	24 (27.9)	41 (38.3)		
Gender					
Female	43 (21.1)	26 (30.2)	33 (30.8)	4.68	0.096

Male	161 (78.9)	60 (69.8)	74 (69.2)		
Marital status					
Married	3 (1.5)	2 (2.3)	3 (2.8)	25.01	<0.001
Widowed	7 (3.4)	3 (3.5)	6 (5.6)		
Divorced	4 (2)	0 (0.0)	13 (12.1)		
Separated	190 (93.1)	81 (94.2)	85 (79.4)		
Education level					
None	1 (0.5)	0 (0.0)	11 (10.3)	14.64	<0.001
Elementary	4 (2)	4 (4.7)	6 (5.6)		
Intermediate	26 (12.7)	6 (7)	5 (4.7)		
Secondary or more	173 (84.8)	76 (88.4)	85 (79.4)		
Employment					
Employed	142 (69.6)	86 (100)	67 (62.6)	19.75	<0.001
Unemployed	62 (30.4)	0 (0.0)	40 (37.4)		
Monthly income (SR)					
<5000	9 (4.4)	0 (0.0)	17 (15.9)	18.51	<0.001
5001-10 000	38 (18.6)	12 (14)	13 (12.1)		
10 001-20 000	109 (53.4)	54 (62.8)	63 (58.9)		
>20 000	48 (23.5)	20 (23.3)	14 (13.1)		
BMI					
Normal weight	66 (32.4)	26 (30.2)	17 (15.9)	14.22	0.007
Overweight	85 (41.7)	46 (53.5)	57 (53.3)		
Obese	53 (26)	14 (16.3)	33 (30.8)		
BMI (Mean $\pm$ SD) (kg/m²)	29.22 $\pm$ 11.18	30.7 $\pm$ 11.86	30.92 $\pm$ 11.06	17.86*	<0.001

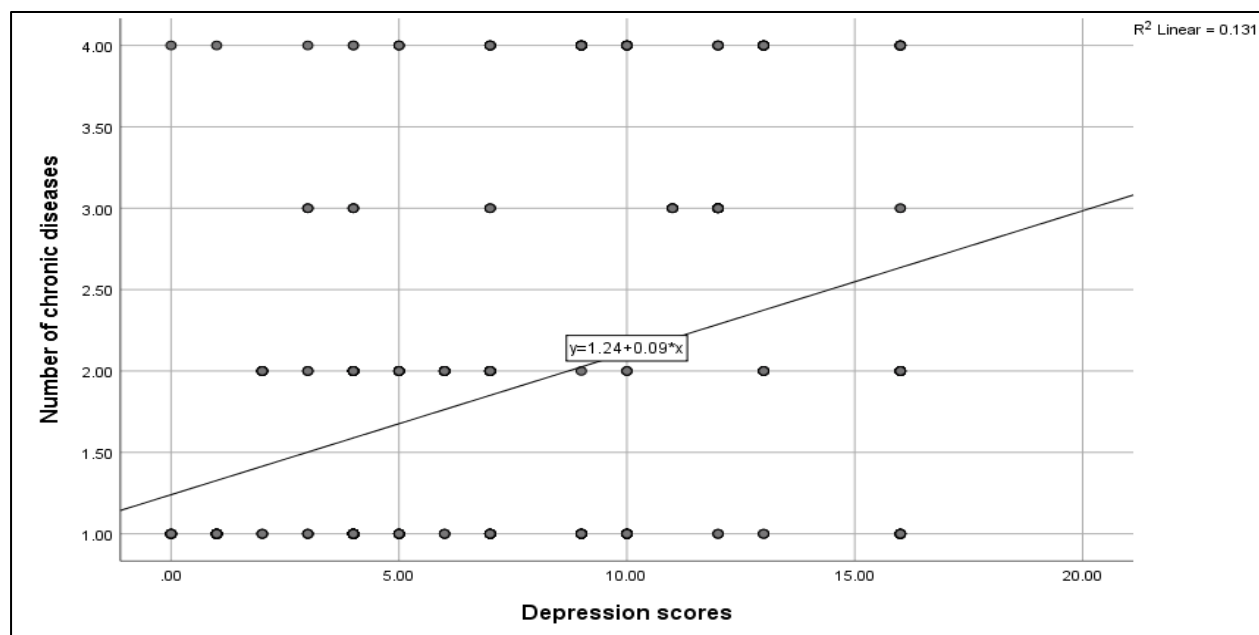
N.B.: * = Kruskal Wallis test

Table 6. Relationship between anxiety levels and number of chronic diseases, disease duration, smoking status, health insurance and lifestyle (no.: 397)

Variable	Anxiety level			χ^2	p-value
	Normal No. (%)	Borderline abnormal (borderline case) No. (%)	Abnormal (case) No. (%)		
Number of chronic diseases					
1	127 (62.3)	31 (36)	46 (43)	12.79	<0.001
2	53 (26)	26 (30.2)	21 (19.6)		
3	13 (6.4)	6 (7)	14 (13.1)		

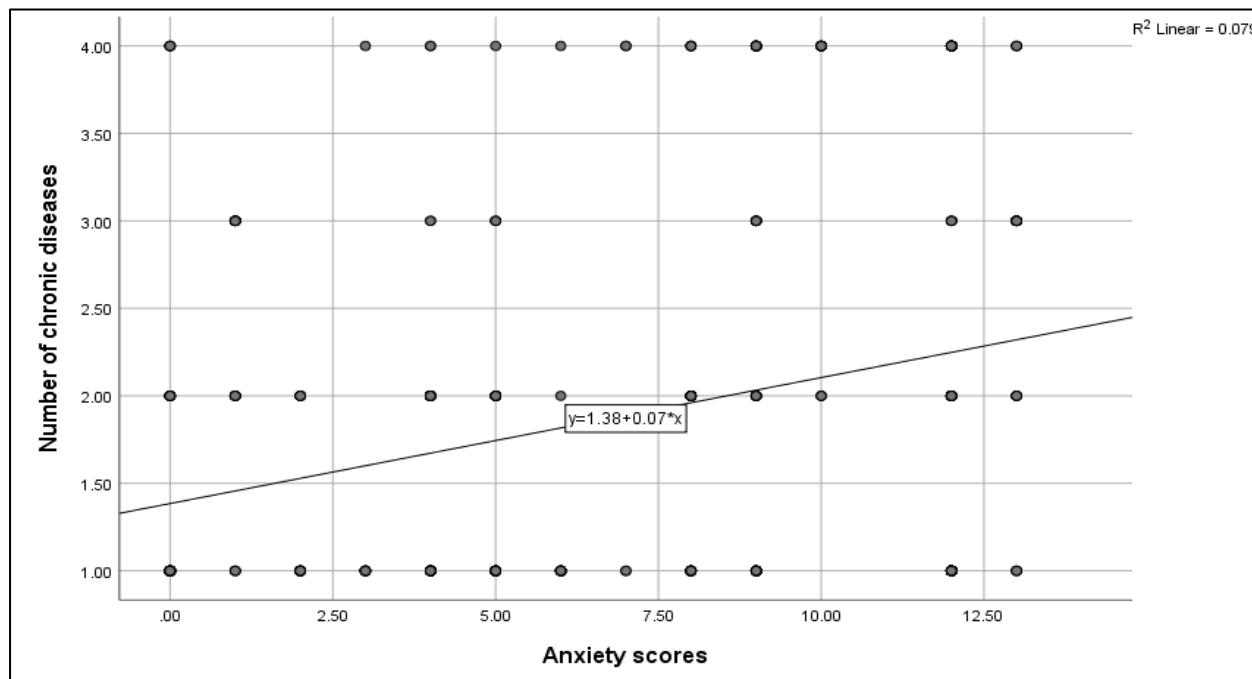
4	11 (5.4)	23 (26.7)	26 (24.3)		
Disease duration					
<3 years	39 (19.1)	30 (34.9)	18 (16.8)	12.06	<0.001
3-6 years	33 (16.2)	0 (0.0)	29 (27.1)		
>6 years	132 (64.7)	56 (65.1)	60 (56.1)		
Smoking					
No	164 (80.4)	64 (74.4)	82 (76.6)	1.44	0.486
Yes	40 (19.6)	22 (25.6)	25 (23.4)		
Health insurance					
No	114 (55.9)	72 83.7)			
Yes	90 (44.1)				
Lifestyle					
Sedentary	59 (28.9)	36 (41.9)	43 40.2)	7.74	0.257
< 1 h of moderate activity of work 81	25 (12.3)	12 (14)	14(13.1)		
1 h of moderate activity of work	36 (17.6)	12 (14)	16 15)		
> 1 h of moderate activity of work	84 (41.2)	26 (30.2)	34 (34.8)		

Figure 3. Spearman's correlation analysis between the depression scores and the number of chronic diseases



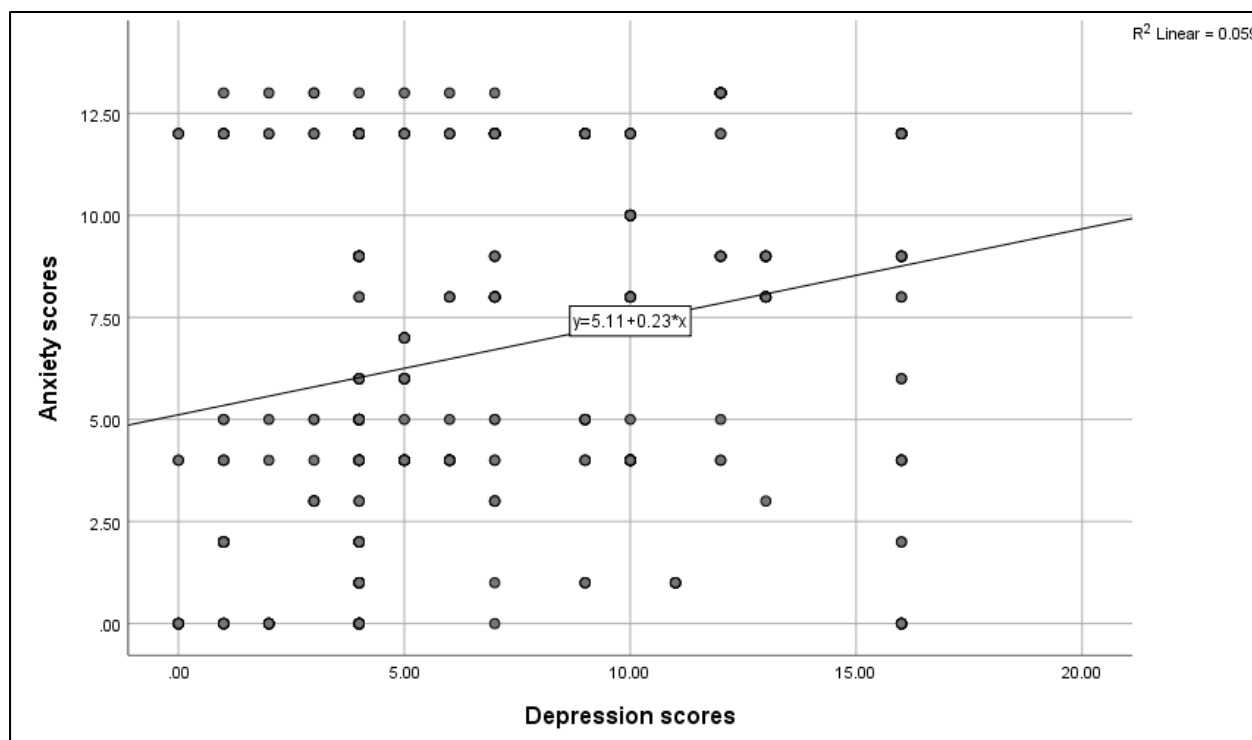
N.B.: ($r = 0.34$, $p\text{-value} = <0.001$)

Figure 4. Spearman's correlation analysis between the anxiety scores and the number of chronic diseases



N.B.: ($r = 0.25$, $p\text{-value} = <0.001$)

Figure 5. Spearman's correlation analysis between the depression scores and the anxiety scores



N.B.: ($r = 0.26$, $p\text{-value} = <0.001$)