

**EXAMINING THE LEVELS OF ANXIETY AND DEPRESSION
AMONG NURSES WORKING AT AL- DIWANIYAH TEACHING
HOSPITAL DURING COVID-19 PANDEMIC**

BY

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ETHICS STATEMENT

The thesis entitled “Examining the levels of anxiety and depression among nurses working at al- diwaniyah teaching hospital during COVID-19 Pandemic” which was prepared and presented as a thesis, was written by myself and in accordance with the scientific, academic rules and ethical conduct. The idea/hypothesis of my thesis solely belongs to my supervisor and to me. The research pertaining to the thesis was conducted by myself and therefore, all of the used sentences and interpretations within the work belongs to me.

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ABSTRACT

EXAMINING ANXIETY AND DEPRESSION IN NURSES WORKING AT AL- DIWANIYAH TEACHING HOSPITAL DURING THE COVID-19 PANDEMIC

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Master of Science in Nursing

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This study investigated the anxiety and depression of nurses working at Al-Diwaniyah Hospital during the COVID-19 pandemic. The study also looked into the effect of demographic characteristics (age, gender, and marital status) on their anxiety and depression levels.

This descriptive study was conducted at Al-Diwaniyah Teaching Hospital in Iraq during the COVID-19 pandemic between December 27, 2020, and February 26, 2021. The sample consisted of 150 nurses. Participation was voluntary. Data were collected face-to-face using a personal information form and the Hospital Anxiety and Depression Scale (HADS). More than half the participants were women (65.3%). More than a quarter of the participants were younger than 26 (34%). More than half the participants were married (58.7%).

Less than half the participants had bachelor's or higher degrees (45.3%). Most participants were non-smokers (71.3%). More than half the participants had been working for less than five years (54.7%) and had no chronic disease (69.3%). One-third of the participants had mild anxiety (33.3%), while one in ten had severe anxiety (10%). Half the participants had normal depression (50%), while ten had severe depression (6.7%). Married participants had a significantly higher mean depression score than single participants. Participants with more than five years of work experience had a

significantly higher mean depression score than those with less than five years of work experience.

Age, education, income status, gender, place of residence, and smoking habits did not affect participants' HADS scores. Authorities should provide nurses with psychosocial services to support their mental health in times of crisis, such as pandemics.

2022, 63 pages

Keywords: COVID-19, Anxiety, Depression, Nursing,



ÖZET

COVID-19 SALGINI SIRASINDA AL-DİWANİYAH EĞİTİM HASTANESİNDE ÇALIŞAN HEMŞİRELER ARASINDA ANKSİYETE VE DEPRESYON DÜZEYİNİN İNCELENMESİ

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Bu araştırma, COVID-19 salgını sırasında Al-Diwaniyah Hastanesi'nde çalışan hemşireler arasındaki anksiyete ve depresyon düzeylerini ve bunların yaş, cinsiyet ve medeni durum gibi demografik veriler bakımından ilişkisini incelemek amacıyla yapılmıştır.

Çalışma COVID-19 salgını sırasında Irak'taki Al-Diwaniyah Eğitim Hastanesi'nde 27 Aralık 2020 - 26 Şubat 2021 tarihleri arasında tanımlayıcı olarak yapılmıştır. Araştırmanın evreni, Irak'taki Al-Diwaniyah Eğitim Hastanesi'nde çalışan hemşirelerden örnekleme ise bu hemşirelerden çalışmaya katılmaya gönüllü olanlar oluşturmuştur.

Çalışmaya 150 hemşire katılmıştır. Veriler yüz yüze toplanmıştır. Verilerin toplanmasında 'Kişisel Bilgi Formu' ve 'Hastane Anksiyete ve Depresyon Ölçeği-HADS' kullanılmıştır. Katılımcıların %65.3'ün kadın, %34.7'si erkek, %34'ünün ise 25 yaş ve altı olduğu belirlenmiştir. katılımcıların %58,7'si evlidir. Eğitim düzeyi bakımından üniversite ve yükseköğretim görenlerin %45,3 olduğu görülmektedir. Çoğunluğu sigara içmemektedir (%71,3). Katılımcıların % 54.7'si 5 yılın altında çalışmaktadırlar ve % 69.3'ünün herhangi bir kronik hastalığı yoktur. Pandemi döneminde hemşirelerin anksiyete puanlarının %33.3'nün hafif, %10'unun ise ciddi düzeyde olduğu belirlenmiştir. Hemşirelerin yarısının (%50) depresyon puanlarının normal olduğu, yalnızca %6.6'sının ciddi düzeyde depresyon puanlarına sahip

oldukları tespit edilmiştir. Hemşireler arasında evli olanların, bekarlara göre; çalışma yılı 5 yılın üzerinde olanların ise 5 yılın altında olanlara göre HADS depresyon puanları anlamlı düzeyde yüksek çıkmıştır.

Ayrıca yaş, eğitim düzeyi, gelir durumu, cinsiyet, ikamet yeri, sigara içme alışkanlıkları ile depresyon ve anksiyete puanları arasında anlamlı bir ilişki bulunmamıştır. Sonuç olarak pandemi gibi afet dönemleri ve sonrasında hemşirelerin ruh sağlığının desteklenmesi için ruh sağlığını destekleyici psikososyal hizmetlerin planlanması ve sürdürülmesi önerilir

2022, 63 sayfa

Anahtar Kelimeler: COVID-19, Anksiyete, Depresyon, Hemşirelik

PREFACE AND ACKNOWLEDGEMENTS

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Fatima Selam Kasim ALHABEEB

Çankırı-2022

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LIST OF ABBREVIATIONS

COVID-19	Coronavirus disease
WHO	World Health Organization



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1. INTRODUCTION

Healthcare professionals in Wuhan, the capital of Central China's Hubei province, reported an unusually high number of cases of pneumonia in late December 2019. In the following days, authorities discovered that the cause of that mysterious pneumonia was a novel coronavirus (SARS-CoV-2). Therefore, the coronavirus disease (COVID-19), which broke out at the end of 2019, has been classified as a pandemic by the World Health Organization (WHO). The WHO reported 440.807 million confirmed cases and almost six million deaths as of March 4, 2022. A total of 10.585.766.316 vaccine doses have been administered as of February 26, 2022 (WHO, 2022). Evidence points to human-to-human transmission as the most likely route. Respiratory droplets and direct touch typically spread the coronavirus. SARS-CoV-2 was similar to SARS-associated coronavirus (SARS-CoV). However, it is unknown whether it is spread through oral or conjunctival routes (Lee et al., 2020). Each patient infected two or three people. Developing an accurate R_0 estimation approach for transmission dynamics is a work in progress. Therefore, more research is warranted (Lee et al., 2020). There were 2.747 deaths in China and 57 deaths outside China as of February 27, 2020. The number of confirmed infections and deaths by testing is on the rise. Only 3.41 percent of COVID-19-related deaths have been reported. It is too early to estimate how many people have died from the coronavirus because the pandemic has spread quickly. One in four people who tested positive for COVID-19 experienced acute respiratory distress syndrome and was hospitalized. Moreover, a poor outcome may be associated with advanced age and comorbidity (Lee et al., 2020). Healthcare professionals are vulnerable to anxiety and stress because they work day and night during outbreaks. For example, thousands of healthcare professionals reported illness-related anxiety with physical and psychological symptoms during the SARS outbreak. Healthcare professionals also reported symptoms of anxiety, panic, and post-traumatic stress disorder (PTSD) during the Middle East Respiratory Syndrome (MERS) outbreak. Healthcare professionals experienced high levels of stress and anxiety during the COVID-19 pandemic because they had no direct medical information and no full training in personal protective equipment and infection control procedures (Tan et al., 2020). Chew et al. (2020) conducted a global multicenter

trial during the COVID-19 pandemic. They reported that four in five healthcare professionals (n=906) suffered moderate to severe depression. The COVID-19 pandemic significantly impacts the mental health of healthcare professionals. They have worked tirelessly and without pause for months to combat the COVID-19 pandemic. However, the pandemic has taken a major toll on their well-being. They experienced mental illnesses for various reasons. They feared losing their loved ones or transmitting the virus to them. They were away from their families for months. They lost their colleagues to the pandemic. They worked for months wearing protective equipment (Shahin M. et al., 2020).

1.1 Objectives

This study investigated the effect of sociodemographic characteristics on the anxiety and depression of nurses. Data were collected using a personal information form and the Hospital Anxiety and Depression Scale (HADS). The sample consisted of 150 nurses.

1.2 Research Questions

- What HADS scores do participants have?
- Is there a difference between participants' anxiety and depression levels?
- Do participants' demographic characteristics affect their HADS scores?

1.3 Limitations

This study had four limitations. First, the researcher had difficulty building a rapport with healthcare professionals working in the pulmonary resuscitation centers for patients with COVID-19. Second, she was concerned about infecting the coronavirus and transmitting it to her family and friends. Third, she faced challenges, especially at the height of the pandemic when authorities believed it was because of a stigma virus. Fourth, she had difficulty getting permission to enter the health institutions in Iraq and collect information there because authorities were not prepared or qualified enough to deal with the pandemic.

2. GENERAL INFORMATION

2.1. Definition of depression

Depression is characterized by persistent sadness and a lack of interest or pleasure in previously rewarding or enjoyable activities. It is different from the day-to-day ups and downs that most people go through. If grief persists for an extended period, it is considered a symptom of depression. Mood swings can endure for weeks, months, or even years if left untreated (Goldman, 2019). Almost one in five people suffers from clinical depression at some point in their lives for various factors, including brain chemistry, genetic propensity, medical conditions, substance misuse, stress, unhealthy diet, etc. (Goldman, 2019).

2.2. Causes of depression

An increased risk of depression in later life is associated with childhood maltreatment, whether physical, sexual, or emotional (Burce, 2021; Brennan, 2021; Higuera, 2021).

Age: Older people are more vulnerable to depression than younger people. People who live alone and have no close friends and family are more likely to develop symptoms of depression. An increased risk of depression is associated with several drugs, including isotretinoin, interferon-alpha, and corticosteroid (Skalacka & Pajestka, 2021).

- People genetically susceptible to depression may get depressed if they have personal conflicts or arguments with family members or friends (Bruce, 2021).
- If one loses a loved one, one is more likely to suffer depression due to grief or sadness (Nall, 2017).

Gender: Women are twice as likely to develop depression than men. This is likely due to the changes in hormone levels women experience – puberty, pregnancy, menopause, etc. (Burce, 2021; Brennan, 2021; Higuera, 2021).

Genetic factors contribute to the risk of developing depression. Different genes may play a role in depression rather than one gene. The genetic background of depression is more complex and nuanced than conditions like Huntington's chorea or cystic fibrosis (Shadrina et al., 2018). Isolation and exclusion from family and friends can also cause

depression (Hwang et al., 2020). Depression is also a side effect of some medical conditions (Brennan, 2021; Higuera, 2021). One-third of drug addicts suffer from depression. Although drugs or alcohol may temporarily alleviate the symptoms of depression, their long-term effects are detrimental (Geng, 2022). The following are some signs and symptoms of depression.

2.3.Symptoms of Depression

- Having difficulty concentrating, recalling information, and making judgments
- Fatigue
- Guilt, worthlessness, and a sense of helplessness
- Pessimism and hopelessness
- Insomnia, vigilance in the early morning, or excessive sleeping
- Impatience
- Restlessness
- Losing Interest in previously enjoyable activities
- Anxiety, headaches, or cramping
- A sense of "emptiness" despite therapy attempts
- Suicide attempts or suicidal thoughts (Bruce, 2021).

2.4.Treatment

Pharmacological treatment: Selective serotonin reuptake inhibitors (SSRIs), Monoamine oxidase inhibitors (MAOIs), sedatives, and neuroleptics are some of the medications used to treat depression (Higuer, 2021).

Psychotherapy: Talking to a therapist can help develop coping strategies. Sessions with a family or a group of people may also be beneficial. Psychotherapy, also known as talk therapy, can also be used to identify and address issues that contribute to depression. Psychotherapy is a successful treatment for patients with depression and other mental diseases (Higuer, 2021).

Cognitive-behavioral therapy (CBT): Therapists identify problematic thought patterns and understand how they may be causing negative behaviors, attitudes, and beliefs (Arch et al., 2012).

Dialectical behavior therapy (DBT): Dialectical behavior therapy (DBT) is similar to CBT in that it focuses on validating or embracing unpleasant thoughts, feelings, and behaviors rather than fighting them (Arch et al., 2012).

Therapeutic psychodynamic treatment: Psychodynamic therapy is a talk therapy that aims to help one better understand and manage one's daily life. Psychodynamic treatment assumes that one's current reality is influenced by one's unconscious childhood experiences (Higuer, 2021)

2.5.Definition of anxiety

Some symptoms of anxiety are tension in the body and mind, increased blood pressure, persistent and intrusive thoughts, sweating, tremors, disorientation, and rapid heartbeats (American Psychological Association, 2022).

2.6.Causes of Anxiety

Several genetic and environmental factors cause anxiety. Experts also believe that damage to some brain regions involved in fear control causes anxiety. Recent research on anxiety focuses on different parts of the brain linked to anxiety (Legg, 2020).

2.7.Symptoms of Anxiety

- Elevated heart rate
- Fast respiration
- Restlessness
- Difficulty focusing
- Slipping off to sleep (Legg, 2020)

2.8.Treatment of Anxiety

Stress management and relaxation practices can help reduce symptoms of anxiety. Some methods for symptom management include deep breathing exercises, baths, meditation, and yoga. If fear is about a specific stressor, picturing oneself facing and conquering that fear might help alleviate symptoms. Many therapeutic options are available for people suffering from anxiety, such as psychotherapy (Legg, 2020).

2.9. Healthcare professionals and their mental health during COVID-19

Novel coronavirus strains are the source of COVID-19. It was previously known as the "2019 novel coronavirus" or "2019-nCoV." One of the newest strains of the virus, the COVID-19, belongs to the same family that causes SARS and certain strains of the common cold (WHO, 2022).

As of 2019, the SARS-CoV-2 virus has been identified as the cause of COVID-19, a respiratory illness. Infected people spread the virus through coughing, sneezing, or talking, causing respiratory droplets to be released into the air. Those infected may not show any symptoms at all (WHO, 2022).

It is estimated that there will be about 59 million healthcare professionals worldwide by 2030, with up to 80 million needed by then (Joseph and Joseph, 2016; Liu et al., 2017; WHO, 2006).

The emotional well-being of healthcare professionals is a significant issue that affects patient care quality and the efficient running of healthcare services. Emotional well-being issues (emotional exhaustion, distress, nervous breakdown, and anxiety) cause personal safety and workplace risk concerns (da Silva and Neto, 2021a, da Silva and Neto, 2021b; Lai et al., 2020). The COVID-19 pandemic has taken a major toll on healthcare professionals, causing mental problems (da Silva and Neto, 2021a, da Silva and Neto, 2021b; Lai et al., 2020). "

Workload and frequent shifts can all add to the particular strain on healthcare professionals, making it difficult for them to focus on their work. Wu et al. (2020) have reported that the COVID-19 pandemic has significantly affected the mental health of healthcare professionals, including sadness, anxiety, distress, insomnia, and stress.

The psychological impact of the COVID-19 pandemic on healthcare professionals in low-income nations is understudied. However, research shows that the quality of healthcare services and sociocultural differences change the way the COVID-19 pandemic affects healthcare professionals (Wu et al., 2020). Therefore, this study

investigated the effect of the COVID-19 pandemic on the mental health of healthcare professionals.

We predicted that the number of healthcare professionals suffering from mental health problems would be significantly greater during the COVID-19 pandemic than before (Wu et al., 2020)

Wu et al. (2020) conducted research on 2110 medical teams and 2158 university students in China. They found that healthcare professionals and students in Wuhan reported higher stress levels than those from other provinces and universities (Wu et al., 2020). Those with higher stress levels stated that they worried about being sick, had difficulty sleeping or caring for loved ones, and were pessimistic about their future. All these problems cause mental exhaustion, which is linked to social isolation that results in mental problems. Such people are at high risk for depression and suicide. Healthcare professionals experience high stress, depression, and anxiety because they are in constant contact with COVID-19 patients. Particularly those in their early 20s and 30s are more likely to suffer depression, anxiety, and suicidal thoughts (Ferreira et al., 2020). Mental well-being can be improved in a variety of ways, such as through psychological therapy, emotional stimulation, familiarization with certain procedures, reinforcement for social support, and the formation of online communities (Shen et al., 2020).

Nurses' mental health was a cause for concern even before COVID-19. Shields et al. (2005) found that almost one in six Canadian nurses experienced mental problems interfering with their ability to work. They also determined that one in ten Canadian nurses met the diagnostic criteria for depression. Havaei et al. (2020) conducted research with 5500 nurses in British Columbia, Canada, and found that one-third of the participants experienced anxiety and depression, while one in two participants met the criteria for high expressed emotion (EE) and PTSD. Gupta et al. (2020) conducted a prospective study to assess anxiety and depression among healthcare professionals (n=1124) in India during the second phase of the COVID-19 pandemic. About one-third of the participants reported anxiety or depression. Anxiety was more common in women, younger people, and those who worked in a primary care hospital, while

depression was more common in older people and those who worked in a hospital. Emergency preparedness is essential in the event of an outbreak.

Arnetz et al. (2020) conducted a recent study to assess nurses' perceptions of functioning during the early stages of the pandemic in the United States. They found that more than half the participants experienced signs of anxiety, while about a third showed signs of PTSD. Both mental health results were connected to inadequate personal protective equipment.

The American Nurses Association (ANA) conducted a national poll (n=32,000) between March 20 and April 10, 2020, during the early phases of the COVID-19 pandemic to evaluate nurses' anxieties and viewpoints regarding their professional demands and concerns. Seven in ten respondents were concerned about the shortage of personal protective equipment (PPE), while three in five respondents were concerned about the safety of their family and friends. Four in five respondents experienced anxiety about going to work. One in every five healthcare professionals shows anxiety symptoms at some point in their career. The COVID-19 pandemic has threatened nurses' health, well-being, and professional performance. It is also necessary to examine the interactions and well-being of nurses amid the current crisis to identify groups at risk for disease and possible triggers for organizational intervention. Adams et al. (2020) conducted an online survey of healthcare professionals (n=197) to identify risk factors for mental health problems. A quarter of the respondents were nurses (24%). Half the respondents reported symptoms of anxiety (50%). People who suffer from anxiety try to keep it under control by engaging in unproductive, boring, and repetitive activities. People who suffer from mental health problems are often plagued by anxiety that has a negative impact on their personal, professional, and social life. Persistent anxiety is associated with an increased risk of cardiovascular diseases and death (Drummond, 2013).

2.10. Roles and responsibilities of psychiatric nurses in protecting mental health during the COVID-19 pandemic

Since the onset of the pandemic, there has been a growing demand for nurses in areas with high COVID-19 hospitalization rates. COVID-19 cases are predicted to exceed hospital capacity, and personal protective equipment may be in short supply. Nurses are more likely to experience PTSD and burnout in high-stress and high-risk working conditions (Sood, 2020). Lai et al. (2020) found that COVID-19 patients were more likely to suffer from despair, anxiety, and insomnia when cared for by healthcare staff in China. They also determined that nurses had more serious mental health problems than other healthcare professionals. Mental health nurses can treat COVID-19-related mental health concerns using cutting-edge technologies, such as telemedicine. Registered community nurses or advanced practice nurses can provide psychotherapy or medication management as mental treatment.

Virtual support groups are also helpful for those who cannot afford free psychiatric care (Ho et al., 2020). These methods can help patients unable to receive therapy or crisis intervention due to social isolation (Canady, 2020; Zhou et al., 2020). Nurses caring for COVID-19 patients need help with their mental well-being and the mental well-being of those they supervise. Nurses need accurate and up-to-date projections and enough time for rest and self-care (Adams & Walls, 2020). Hospitals should provide assistance or peer assistance programs for healthcare professionals who experience COVID-19-related distress so that they can make ethically challenging decisions about patient access to care and resources. Mental health experts and nurses should address mental health repercussions and social distancing processes during the pandemic. Authorities should develop support lines and telemedicine access to mental health treatment to help frontline healthcare professionals deal with stress. Patients in inpatient psychiatric facilities must maintain a therapeutic environment while adhering to social distance rules. Psychiatrists and mental health nurses play a crucial role in alleviating the adverse impact of the pandemic on mental health and social life (Brayden et al., 2020). Nurse support lines and telemedicine access to mental health care should be provided to help frontline healthcare professionals deal with stressors. Inpatient mental health nurses

should always provide a therapeutic and recovery-friendly environment. Mental health doctors and nurses are well-equipped to respond to COVID-19 at every step, despite the stigma attached to mental health conditions. Mental health professionals and nurses should take the lead in this effort to address and mitigate the mental health implications of COVID-19. Mental healthcare professionals are now well-positioned to take control of therapy at every step, thanks to COVID-19 implementation. Mental health professionals and nurses must now address and limit the impacts of COVID-19 on mental health (Brayden et al., 2020)



3. MATERIAL METHODS

3.1. Design

This was a descriptive cross-sectional study.

3.2. Setting and Sample

Data were collected in Al-Diwaniya teaching hospital, Iraq, between December 27, 2020, and February 26, 2021. The study population consisted of 300 nurses. The sample consisted of 150 nurses recruited using purposive sampling. A power analysis (G* power) was performed to determine the sample size. The results showed that a sample of 150 would be large enough to detect significant differences (effect size: 3.0, power: 0.98, p : 0.05).

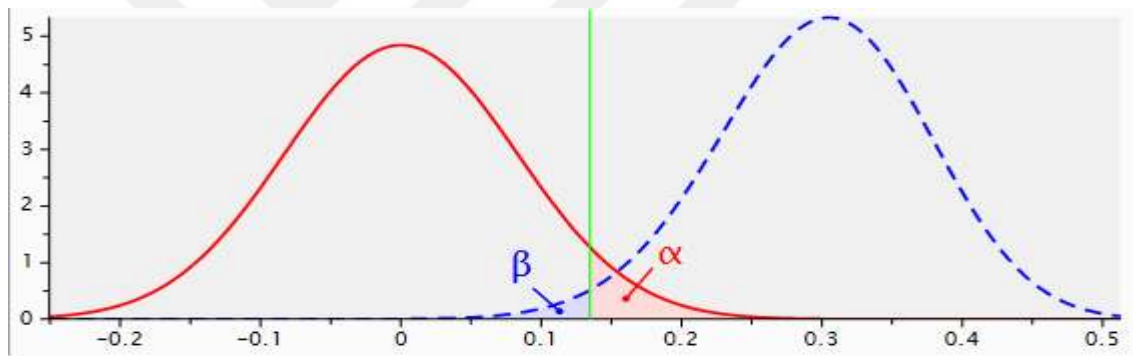


Figure (A) G- power analysis

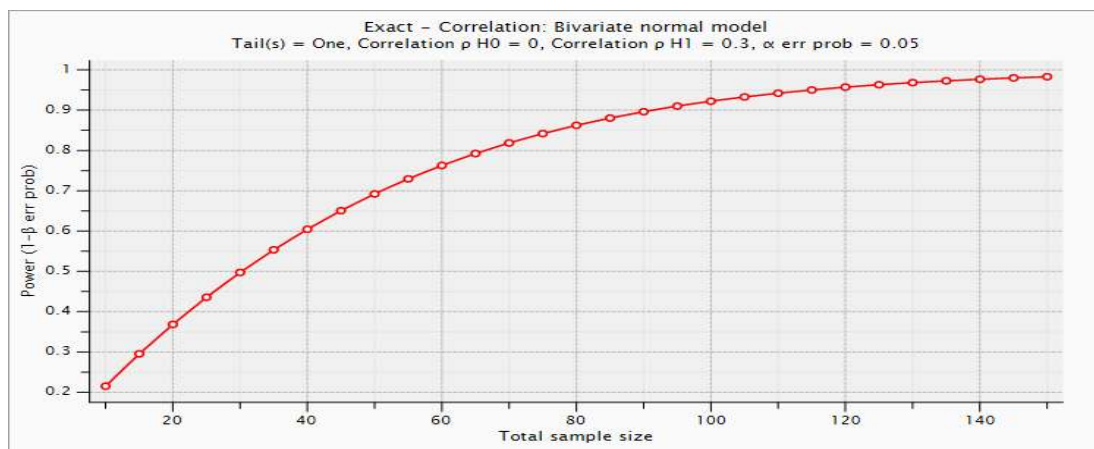


Figure (B) G- power analysis

3.3. Inclusion and Exclusion Criteria

The inclusion criteria were (1) being a nurse, (2) having a degree, and (3) caring for COVID-19 patients.

Exclusion Criteria

The exclusion criteria were (1) not speaking Arabic and (2) declining participation.

3.4. Data Collection Tools

The data were collected using a *sociodemographic form and the Hospital Anxiety and Depression Scale (HADS)*.

The *sociodemographic form consisted of nine items (age, gender, marital status, education, work experience, monthly income, place of residence, smoking status, years of service, and chronic diseases)*.

The Hospital Anxiety and Depression Scale (*HADS*) was developed by Zigmond and Snaith (1983). The scale consists of 14 items on anxiety (*HADS-A*; n=7) and depression (*HADS-D*; n=7) in nurses. The items are rated on a four-point Likert-type scale (0 to 3). The Arabic version of the instrument is valid and reliable. The scale has a Cronbach's alpha of 0.83 (Terkawi et al., 2017). Anxiety scores are rated on a scale of normal (0-7), mild (8-10), moderate (11-14), and severe (15-21). In the present study, the *HADS-A had a specificity of 0.78 and a sensitivity of 0.9*, while the *HADS-D had a specificity of 0.79 and a sensitivity of 0.83*.

3.5. Ethical Consideration

The study was approved by the ethics committee of the Ministry of Higher Education and Scientific Research – the University of Karbala - College of Nursing. The research was conducted in the Diwaniyah Health Department/Training and Human Development. Written permission was obtained from Al-Diwaniyah Teaching Hospital for COVID-19/Iraq. All nurses were informed about the research purpose and procedure. Informed consent was obtained from those who agreed to participate.

3.6. Data Collection

The data were collected between December 27, 2020, and February 26, 2021. The data were collected through interviews, each of which lasted 15 to 25 minutes.

3.7. Data Analysis

The data were analyzed using the Statistical Package for Social Sciences (SPSS, v 26.0) at a significance level of 0.05. The data were tested for normality. The results showed that the data were nonnormally distributed. Therefore, nonparametric tests were used to analyze the data. The Mann-Whitney U test was used to determine the effect of sociodemographic characteristics (gender, marital status, monthly income, place of residence, smoking status, and having a chronic disease) on HADS scores. The Kruskal-Wallis H test was used to determine the effect of age, education, and work experience on HADS scores.

4. RESULTS

This section addressed the results. First, the sociodemographic characteristics were presented. Second, participants' scale scores were analyzed. Third, the effect of sociodemographic characteristics on scale scores was analyzed.

Table 4.1: Demographic Characteristics (n = 150)

Demographic Characteristics	n	%
Age (years)		
≤25	51	34
26 – 30	40	26.7
31 – 35	23	15.3
36 – 40	15	10
41≥	21	14
Gender		
Woman	98	65.3
Man	52	34.7
Marital status		
Single	62	41.3
Married	88	58.7
Education (degree)		
Secondary school of nursing	36	24
Institute of nursing	46	30.7
Bachelor's or higher	68	45.3
Monthly income		
Enough	89	59.3
Not enough	61	40.7
Residence		
Rural	44	29.3
Urban	106	70.7
Smoking		

Yes	43	28.7
No	107	71.3
Work experience		
≤ 5	82	54.7
6 – 10	29	19.3
11- 15	15	10
16≥	24	16
Chronic disease		
Yes	46	30.7
No	104	69.3
Total	150	100

More than half the participants were women (65.3%). More than a quarter of the participants were younger than 26 (34%). More than half the participants were married (58.7%). Almost half the participants had bachelor's or higher degrees (45.3%). Most participants were non-smokers (71.3%). More than half the participants had less than six years of work experience (54.7%). Most participants had no chronic disease (69.3%).

Table 4.2: Hospital Anxiety and depression scale (N = 150)

HADS Items		n	%
Anxiety			
I feel tense or wound up	Most of the time	17	11.3
	A lot of the time	71	47.3
	From time to time, occasionally	21	14.0
	Not at all	41	27.3
Get a sort of frightened feeling as if something awful is about to happen	Very definitely and quite badly	39	26.0
	Yes, but not too badly	65	43.3
	A little, but it doesn't worry me	15	10.0
	Not at all	31	20.7
Worrying thoughts go	A great deal of the time	19	12.7

through my mind	A lot of the time	57	38.0
	From time to time, but not too often	49	32.7
	Only occasionally	25	16.7
I can sit at ease and feel relaxed	Definitely	22	14.7
	Usually	63	42.0
	Not Often	45	
	Not at all	20	13.3
I get a sort of frightened feeling like 'butterflies' in the stomach	Not at all	18	12.0
	Occasionally	71	47.3
	Quite Often	40	26.7
	Very Often	21	14.0
I feel restless as I have to be on the move	Very much indeed	29	19.3
	Quite a lot	70	46.7
	Not very much	37	24.7
	Not at all	14	9.3
I get sudden feelings of panic	Very often indeed	32	21.3
	Quite often	53	35.3
	Not very often	54	36.0
	Not at all	11	7.3
Depression assessment			
I still enjoy the things I used to enjoy	Definitely as much	38	25.3
	Not quite so much	70	46.7
	Only a little	26	17.3
	Hardly at all	16	10.7
I can laugh and see the	As much as I always could	44	29.3

funny side of things	Not quite so much now	71	47.3
	Definitely not so much now	17	11.3
	Not at all	18	12.0
I feel cheerful	Not at all	47	31.3
	Not often	69	46.0
	Sometimes	22	14.7
	Most of the time	12	8.0
I feel as if I am slowed down	Nearly all the time	41	27.3
	Very often	35	23.3
	Sometimes	58	38.7
	Not at all	16	10.7
I have lost interest in my appearance	Definitely	48	32.0
	I don't take as much care as I should	45	30.0
	I may not take quite as much care	38	25.3
	I take just as much care as ever	19	12.7
I look forward with enjoyment to things	As much as I ever did	49	32.9
	Rather less than I used to	64	42.3
	Definitely less than I used to	19	12.8
	Hardly at all	18	12.0
I can enjoy a good book or radio or TV program	Often	29	19.3
	Sometimes	67	44.7
	Not often	26	17.3
	Very seldom	28	18.7

Almost one in two participants experienced anxiety many times (47.3%). Two in five participants felt fear as if something terrible was about to happen, but not too badly (43.3%). Two in five participants had worrying thoughts running through their minds many times (38%). Two in five participants could sit up and rest normally (42%). Almost one in two participants occasionally felt some fear, like "butterflies" in their stomachs (47.3%). Almost one in two participants were worried because it must be in motion quite a lot (46.7%).

Almost one in two participants stated that they still enjoyed the things they used to enjoy, but not very much (47.3%). Almost one in two participants stated they could not laugh and see the funny aspects of things that much (47.3%). Almost one in two participants did not feel happy in most cases (46.3%). Two in five participants felt sluggish at times (42.3%). Three in ten participants definitely lost interest in their appearance (32%). Two in five participants enjoyed things less than they used to (42.3%). Almost two in five participants enjoyed reading good books, listening to the radio, or watching TV shows (44.7%).

Table 4.3. Scale scores (N =150)

Scale scores	HADS	Anxiety	%	Depression	%
		n		n	
Normal	0-7	42	28	75	50
Mild	8-10	50	33.3	37	24.7
Moderate	11-14	43	28.7	28	18.7
Severe	15-21	15	10.0	10	6.7

One-third of the participants experienced mild anxiety (33.3%). Three in ten participants did not experience anxiety (28.7%). Three in ten participants experienced moderate anxiety (28.7%). One in ten participants experienced severe anxiety (10%).

Half the participants did not experience depression (50%). A quarter of the participants experienced mild depression (24.7%). One in five participants experienced moderate depression (18.7%). Ten participants experienced severe depression (6.7%).

Table 4.4. The relationship between HADS scores and demographic characteristics (n = 150)

Grouping Variables	HADS-A					HADS-D			
	N	Mean	SD	U*	P*	Mean	SD	U*	P*
Gender									
Man	52	81.53	26	2234	0.214	68.81	34.4	2200	0.168
Woman	98	72.30	49	.5		79.05	39.5	.0	
Marital Status									
Single	58	78.78	39.3	2478	0.46	64.94	32.4	2055	0.01
Married	92	73.43	46			82.16	41.0	.5	
Monthly Income									
Enough	89	74.43	37.2	2619	0.71	71.10	35.5	2322	0.13
Not Enough	61	77.07	38.5	.0		81.93	40.9	.5	
Residence									
Rural	44	78.33	22	2207	0.6	67.50	33.7	1980	0.14
				.5				.0	
Urban	106	74.33	53			78.82	39.4		
Smoking									
Yes	43	79.84	21.5	2114	0.43	68.48	34.2	1998	0.20
No	107	73.76	53.5	.0		78.32	39.1	.5	
Chronic Disease									
Yes	46	77.42	38.7	2303	0.71	66.15	33.0	1962	0.07
No	104	74.65	37.3	.5		79.63	39.8	.0	

* Mann-Whitney U Test

Married participants had a significantly higher mean HADS-D score than single participants ($p < 0.05$). However, the other sociodemographic characteristics had no significant effect on participants' HADS-D scores ($p > 0.05$).

None of the sociodemographic characteristics significantly affected participants' HADS-A scores ($p > 0.05$).

Table 4.5 The relationship between HADS scores and age, education, and work experience (n = 150)

Grouping Variables	HADS-A					HADS-D			
Age (years)	N	Mean Rank	SD	Chi-Square **	P**	Mean Rank	SD	Chi-Square **	P**
≤25	51	80.44	16.0	4.246 df=4	0.37	67.53		5.846 df=4	0.21
26-30	40	69.51	13.9			77.64			
31-35	23	70.87	14.1			71.04			
36-40	15	64.83	12.9			78.27			
41≥	21	87.60	17.5 2			93.69			
Education (degree)									
Secondary school of nursing	36	74.08	24.6	0.127 df=2	0.93	64.72	21.5	4.222 df=2	0.121
Institute of nursing	46	71.59	23.8			66.87	22.29		
College and post.	61	71.08	23.6			80.16	26.72		
Work experience (year)									

≤5	82	74.12	14.8	2.608 df=3	0.45	67.59	16.8	8.826 df=3	0.03
6-10	29	76.90	19.2			86.17	21.5		
11-15	15	63.73	15.9			69.67	17.4		
16≥	24	85.90	21.4			93.27	23.3		

****Kruskal-Wallis H Test**

Participants with more than five years of work experience had a significantly higher mean HADS-D score than those with less than five years of work experience. However, the other variables did not significantly affect participants' HADS scores.



5. DISCUSSION

This section discussed the results with reference to the literature.

5.1. Anxiety and depression in nurses

One-third of our participants experienced mild anxiety (33.3%), while only one out of ten participants experienced severe anxiety. These results are consistent with the literature. For example, Gotlib et al. (2020) found that the prevalence of severe and mild anxiety among nursing students was 12% and 23.7%, respectively. Savitsky et al. (2020) also reported that the prevalence of mild and severe anxiety among nursing students was 23.5% and 13%, respectively. Lun et al. (2018) found that the prevalence of moderate and severe anxiety among undergraduate students in Hong Kong (n=1200) was 12.5% and 5.8%, respectively. Bártolo et al. (2017) determined that the prevalence of moderate and severe anxiety among Portuguese college students (n=1.031) was 15.6% and 8.3%, respectively. Farrer et al. (2016) investigated the demographic and psychosocial predictors of depression and anxiety in Australian university students (n=611). They reported that almost one in five students experienced moderate anxiety (17.5%). The prevalence of moderate anxiety among medical students was 25% in the UK, 20% in North America, 13.7% in New Zealand, and 23% in Lebanon (Quek et al., 2019). Şahin and Kulakaç (2021) conducted a cross-sectional study to explore anxiety levels in healthcare professionals (n=356) during the COVID-19 pandemic. However, they reported that the prevalence of mild and severe anxiety was 50% and 17%, respectively.

Half of our participants had no depression (50%), while ten had severe depression (6.7%). These results are consistent with the literature (Lai et al., 2020). Nadeem et al. (2021) also found that the prevalence of normal and severe depression among nursing staff in Pakistan was 50% and 7.1%, respectively.

5.2. Discussing the relationship between anxiety and depression and demographic characteristics

More than half of our participants were women (65.3%). The percentage of female nurses in Hu et al. (2020), Nadeem et al. (2021), and Tasnim et al. (2021) was 87.1%, 91.5%, and 49.3%, respectively.

A quarter of our participants were 26 to 30 years of age. Hu et al. (2020) reported that the mean age of nurses was 30.9 years. Nadeem et al. (2021) found that most nurses were between the ages of 28 and 37 years (76%). Tasnim et al. (2021) determined that half the nurses were between 18 and 25 years (52.6%).

More than half of our participants were married (58.7%). Nadeem et al. (2021) and Tasnim et al. (2021) also reported that more than half of nurses were married (62.2% and 69.9%, respectively).

Less than half of our participants had bachelor's or higher degrees (45.3%). Hu et al. (2020) found that most nurses had bachelor's degrees (78.1%). Nadeem et al. (2021) reported that almost half of nurses had bachelor's or higher degrees (48.8%).

More than half of our participants had enough monthly income (59.3%) and lived in cities (70.7%). Tasnim et al. (2021) reported that most nurses lived in cities (81.7%).

More than half of our participants were non-smokers (71.3%). Tasnim et al. (2021) also reported that most nurses were non-smokers (86.3%).

More than half the participants had less than five years of work experience (54.7%) and had no chronic diseases (69.3%). Tasnim et al. (2021) reported that most nurses had no chronic diseases (90.2%).

One-third of our participants experienced mild anxiety (33.3%), while one in two participants did not experience anxiety at all (50%).

De Pinho et al. (2021) found that nurses with better mental health spent less time searching for information about the COVID-19 pandemic, had healthier dietary habits,

did more physical activity, and were more sociable. Nurses do not need much money or time to implement those self-care strategies. Therefore, healthcare professionals should adopt health-promoting behaviors and encourage their patients to do the same. De Pinho et al. (2021) also reported that more than half the nurses experienced no anxiety (54.3%), while the remaining experienced mild (9.6%), moderate (17.5%), severe (7.7%), or really severe anxiety (10.8%).

Huet al. (2020) also found that half the nurses did not enjoy things as much as they used to (47.3%), did not laugh and see the funny side of things as much as they used to (47.3%), and did not feel cheerful (46.3%). They also reported that less than half the nurses felt slow (38.7%), lost interest in their looks (32%), and looked forward to fewer things than they used to (42.3%). They also found that more than half the nurses were depression-free (56.4%), while the remaining experienced mild (32.8%), moderate (9.6%), or severe depression (1.1%).

Arafa et al. (2020) determined that seven in ten nurses suffered from depression (69%). They also stated that two in five nurses reported mild to moderate symptoms, while three in ten reported severe to very severe symptoms.

Nadeem et al. (2021) found that half the nurses found life useless (47%), while less than half the nurses believed they were useless as human beings (34%). These nurses had an average depression score of 6.005.30, indicating mild depression (Nadeem et al., 2021).

Tasnim et al. (2021) reported that more than half the nurses experienced no depression (60.5%), while four in five nurses experienced abnormal borderline (23.8%) or sub-depressive symptoms (15.7%). The researchers also found that half the nurses experienced no depression. De Binho et al. (2021) determined that more than two-thirds of nurses were considered normal (64.9%), while the remaining suffered from mild (14.9%), moderate (12.8%), or severe depression (4.9%)

Alnazly et al. (2021) surveyed 365 Jordanian healthcare professionals. They reported that anxiety and depression among Jordanian healthcare professionals were quite severe (21.30 10.86). The COVID-19 pandemic causes mental health problems. Ren et al. (2020) conducted a meta-analysis of 12 studies involving 27.475 people in China. The

researchers warned that the data should be approached with caution because of the considerable heterogeneity in studies regarding the pooled prevalence of anxiety and depression. They reported that a quarter of nurses suffered from anxiety (25%) and sadness (27%). They concluded that a comprehensive crisis prevention strategy that encompasses epidemiological surveillance, screening, and psychological crisis prevention and intervention is essential in light of the current stage of the pandemic.

Silva et al. (2020) reported that healthcare professionals had significant mental disorders, regardless of age. They also found that three out of ten nurses suffered from anxiety (33%) and depression (36%).

De Pablo et al. (2020) conducted a systematic review to identify studies on physical/mental health outcomes in healthcare professionals. They concluded that the pandemic substantially impacted the physical and mental health of healthcare professionals. Their results showed that one out of five nurses had anxiety (22.2%) and depression (17.9%).

Luo et al. (2020) reviewed 62 studies with 162,639 participants from 17 countries. They found that a quarter of nurses experienced anxiety (25%) and sadness (26%) due to the COVID-19 pandemic. They concluded that we urgently need psychological therapies for high-risk individuals experiencing severe psychological distress. Heidarijamebozorgi et al. (2021) performed a cross-sectional descriptive-analytical study of 374 Iranian nurses. They found that melancholy and anxiety were pervasive among nurses caring for COVID-19 patients.

The coronavirus is a severe and contagious disease that spreads swiftly and is hard to manage. Patients who test positive for COVID-19 suffer from respiratory problems that might lead to death. Nurses caring for such patients experience fear, anxiety, and depression as they may feel unable to combat the infection. Nurses also experience mental problems for various reasons. First, they fear getting infected and transmitting the virus to their loved ones. Second, they have to care for more and more people infected with the virus daily. Therefore, they become frustrated and experience burnout due to overwork and increased stress.

This study was conducted in Iraq during the COVID-19 pandemic. However, due to cultural factors, Iraqi nurses are not significantly affected by anxiety and depression. However, there are individual differences between nurses based on demographic data.

Married participants had a significantly higher mean depression score than single participants. Çelik and Daglı (2021) also found that nurses married with children had higher depression than singles. On the other hand, Sheikhbardsiri et al. (2021) reported that single nurses experienced more anxiety and depression than their married counterparts. Married Iraqi people experience more depression probably because they have more burdens than single people.

Participants with more than five years of work experience had a significantly higher mean depression score than those with less than five years of work experience. Zakeri et al. (2021) also reported a significant association between depression and work experience and monthly working hours among nurses during the pandemic. However, An et al. (2020) also indicated that heavy workloads and shifts led to higher depression among emergency nurses

6. CONCLUSION

The following are conclusions based on the results:

1. Nurses working in Al-Diwaniyah Hospital in Iraq during the COVID-19 pandemic suffer from mild anxiety but do not suffer from depression.
2. Married nurses and those with more than five years of work experience suffer from depression.
3. Nurses are not concerned about COVID-19, despite the prevalence at the time of the study.

6.1.Recommendations

Al-Diwaniyah Hospital should implement preventive measures to reduce the anxiety of the nurses working there. It is recommended that all hospitals in Iraq should introduce preventive measures to improve the quality of life of nurses and the quality of services they provide to COVID-19 patients. Hospitals should provide married nurses with counseling programs to alleviate their depression. Such programs can help married nurses feel better and provide effective patient care. Authorities should develop social bulletins and programs for all healthcare professionals, especially nurses with less than five years of experience, to help reduce their depression levels

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APPENDICES

APPENDIX 1. Socio-demographic form

Questionnaire in English Language

Examining the Levels of Anxiety and Depression among Nurses Working at Al- Diwaniyah Teaching Hospital during COVID-19 Pandemic. There is a set of paragraphs in the form, please read it carefully and answer it without leaving any paragraph of the importance of research, as it contributes to developing nursing information in Note that the information will be confidential and for the purpose of scientific research only

And thank you for your cooperation with us to serve the goals of the study

1. Gender: -
 - a) Male
 - b) Female
2. Age: years
3. Marital status:
 - a) Single
 - b) Married
4. Educational level:-
 - a) Nursing junior
 - b) high institute of nursing
 - c) Graduate School of Nursing
4. Monthly Income:-
 - a) enough
 - b) enough to some extent
 - c) not enough

5. Accommodation:-

- a) Rural
- b) Urban

6. Smoking cigarettes:-

- a) Yes
- b) No

7. Number of years of nursing service:- years

8. You have chronic diseases:

- a) Yes
- b) No



APPENDIX 2. Hospital Anxiety and Depression Scale-HADS

Tick the box beside the reply that is closest to how you have been feeling in the past week.

Don't take too long over you replies: your immediate is best.

D	A		D	A	
		I feel tense or 'wound up':			I feel as if I am slowed down:
	3	Most of the time	3		Nearly all the time
	2	A lot of the time	2		Very often
	1	From time to time, occasionally	1		Sometimes
	0	Not at all	0		Not at all
		I still enjoy the things I used to enjoy:			I get a sort of frightened feeling like 'butterflies' in the stomach:
0		Definitely as much		0	Not at all
1		Not quite so much		1	Occasionally
2		Only a little		2	Quite Often
3		Hardly at all		3	Very Often
		I get a sort of frightened feeling as if something awful is about to happen:			I have lost interest in my appearance:
	3	Very definitely and quite badly	3		Definitely
	2	Yes, but not too badly	2		I don't take as much care as I should
	1	A little, but it doesn't worry me	1		I may not take quite as much care
	0	Not at all	0		I take just as much care as ever
		I can laugh and see the funny side of things:			I feel restless as I have to be on the move:
0		As much as I always could		3	Very much indeed
1		Not quite so much now		2	Quite a lot
2		Definitely not so much now		1	Not very much
3		Not at all		0	Not at all
		Worrying thoughts go through my mind:			I look forward with enjoyment to things:
	3	A great deal of the time	0		As much as I ever did
	2	A lot of the time	1		Rather less than I used to
	1	From time to time, but not too often	2		Definitely less than I used to
	0	Only occasionally	3		Hardly at all

		I feel cheerful:			I get sudden feelings of panic:
3		Not at all		3	Very often indeed
2		Not often		2	Quite often
1		Sometimes		1	Not very often
0		Most of the time		0	Not at all
		I can sit at ease and feel relaxed:			I can enjoy a good book or radio or TV program:
	0	Definitely	0		Often
	1	Usually	1		Sometimes
	2	Not Often	2		Not often
	3	Not at all	3		Very seldom



APPENDIX 3. Questionnaire in Arabic Language

عزيزي/ عزيزتي الممرض/ة...

أدناه مجموعة من الفقرات الخاصة برسالة الماجستير الموسومة (فحص مستويات القلق والإكتئاب أثناء تفشي وباء كوفيد-19 لدى الممرضين العاملين في مستشفى الديوانية التعليمي) راجين تفضلكم بقراءتها جميعاً والإجابة عليها دون استثناء بوضع دائرة أمام الاختيارات المقابلة لكل فقرة في الفقرات التي ترى إنها تناسبك أكثر من غيرها ولا حاجة لذكر الاسم علماً أن المعلومات ستكون سرية ولا تستعمل إلا لأغراض البحث العلمي.

أولاً :-المعلومات الديموغرافية :-

1. الجنس:-ذكر ☐ أنثى ☐

2. العمر:- سنة ☐

3. الحالة الزوجية:-

أعزب/عزباء ☐ متزوج /متزوجة ☐

4. المستوى التعليمي:-

اعدادية تمرير ☐ معهد تمرير ☐

كلية تمرير ☐ دراسات عليا ☐

5. الدخل الشهري:-

يكفي ☐ يكفي الى حد ما ☐ لا يكفي ☐

6. السكن:-

ريف ☐ مدينة ☐

7. تدخن السجائر:-

نعم ☐ لا ☐

8. عدد سنوات الخدمة التمريضية:- سنة

9. لديك امراض مزمنة:

نعم ☐ لا ☐

ثانياً :- مقياس القلق

أدناه مجموعة فقرات، يرجى قرائتها واختيار الجواب الذي تراه مناسباً

ت	الفقرات	الاستجابة		
1	أشعر بالقلق أو عبأ القلق	معظم الوقت	كل الوقت	من وقت الى اخر (أحياناً) على الاطلاق
2	أشعر بنوع من الخوف يحدث على هيئة اضطرابات في المعدة	غالباً جداً	في اغلب الاحيان	أحياناً لا أشعر بيه اطلاقاً
3	أشعر بنوع من الخوف كما لو ان شيئاً سيئاً على وشك الحدوث	بالتأكيد وسيئاً للغاية	نعم ولكن ليس سيئاً للغاية	قليلاً ولكن هذا لا يقلقني ليس مما ذكر
4	أشعر بعدم الارتياح اثناء القيام بالعمل أو التحرك	في الواقع كثيراً	ليس كثيراً نوعاً ما	ليس كثيراً ليس مما ذكر
5	أفكار مقلقه تمر في ذهني	قدراً كبير من الوقت	في كثير من الاحيان	من وقت الى اخر ولكن ليس كثيراً ليس مما ذكر
6	ينتابني شعور مفاجئ بالذعر	في الواقع كثيراً جداً	في كثير من الاحيان	ليس كثيراً ليس مما ذكر
7	يمكنني الجلوس بسهولة والشعور بالراحة	ليس مما ذكر	ليس كثيراً	احياناً بالتأكيد

ثالثاً :- مقياس الاكتئاب

أدناه مجموعة فقرات، يرجى قرائتها واختيار الجواب الذي تراه مناسباً

ت	الفقرات	الاستجابة
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1	أشعر بأنني متباطئ عند القيام بالمهام اليومية	تقريبا طول الوقت	كثيرا جدا	احيانا	ليس مما ذكر
2	لا زلت استمتع بالأشياء التي اعتدت ان استمتع بيها	نادرا ما	فقط قليلا	ليس كثيرا	بالتأكيد كثيرا
3	استطيع ان اضحك وارى الجانب الإيجابي من الحياة	بقدر ما استطيع	ليس كثيرا الان	بالتأكيد ليس كثيرا الان	على الاطلاق لا
4	اشعر بالبهجة	لا اشعر اطلاقا	ليس كثيرا	احيانا	اغلب الاحيان
5	فقدت الاهتمام بمظهري	بالتأكيد	انا لا اهتم بنفسي بالقدر الذي يجب ان اهتم به	قد لا اهتم بنفس القدر من العناية الذي كنت اهتم بيه سابقا	انا اعتني بنفس القدر من العناية اكثر من أي وقت مضى
6	انا أتطلع الى المستقبل واستمتع بالحياة	نادرا ما	بالتأكيد اقل مما اعتدت عليه	اقل مما اعتدت عليه	بقدر ماكنت افعل في أي وقت مضى
7	يمكنني لن استمتع بقراءة كتاب جديد او مشاهدة تلفاز او برنامج إذاعي	نادرا ما	ليس غالبا	احيانا	غالبا

APPENDIX 4. Plagiarism Report





CURRICULUM VITAE

Personal Information

Name :FATIMAH SALAM QASIM ALHABEEB

Sex : Fale

Mobile No :

Date of Birth :

Age : 28 years

Marital Status : single

Education

Qualifications Education Status: College of Nursing / University of Al-Qadisiyah .

Work Experience

1. I worked as a nurse at Al Diwaniyah Teaching Hospital in the Department of diabetes specialized center and
2. I worked in the a specialised burn hospital.
3. I worked as a lecturer at the higher institute of health for two years.
4. An awareness course for weapon contamination of the environment by the Red Cross.
- 5.Training on anesthesia devices in the state of Chicago. America.
6. multiple nursing courses at the Iraqi and American army base Speicher in Tikrit.
7. Training Course Nursing Service Improvement for Key Departments of Iraqi Hospital sponsored by the Ministry of Commerce and organized by International Health Exchange Center of Health and Family Planning Commission of Sichuan Province from in Chengdu. the People's Republic of China.