Çankırı Karatekin University
Graduate School of Health Sciences

Master of Science Thesis

PERCEIVED STRESS AND RELATED FACTORS AMONG NURSES WORKING IN HOSPITALS

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Supervisor
Asst. Prof. Serap AÇIKGÖZ

ÇANKIRI 2023

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BY

Marwah Kamal Shukur AL-HAMAWNDY

The Institute of Health Sciences
The Department of Public Health Nursing

The Degree of Master of Science

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Çankırı 2023

ACCEPTANCE AND APPROVAL

Marwah Kamal Shukur AL-HAMAWNDY, the graduate student of The Institute of Health Sciences with the student number of 208205227 , has successfully presented her thesis entitled “perceived stress and related factors among nurses working in hospitals” before the jury whose signatures are below, after fulfilling all of the requirements determined by the relevant regulations for the degree of Master of Science.

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ETHICS STATEMENT

The thesis entitled “Perceived Stress And Related Factors Among Nurses Working In Hospitals” 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.

I declare the aforementioned issues to be correct.

Signature

Marwah Kamal Shukur AL-HAMAWNDY

ABSTRACT

PERCEIVED STRESS AND RELATED FACTORS AMONG NURSES WORKING IN HOSPITALS

Marwah Kamal Shukur AL-HAMAWNDY

Master of Science in Nursing

Advisor: Asst. Prof. Serap AÇIKGÖZ

January 2023

Background*:* Occupational stress is one of the problems that may interfere with nurses performance like job satisfaction and adherence. The current study aimed to assess This study aimed to evaluate the perceived stress levels and stress-related factors in nurses working in hospitals in Iraq.

Aim of the study:. This study was conducted to evaluate the perceived stress levels and stress-related factors in nurses working in hospitals in Iraq.

Methodology: The population of the study consisted of nurses working in Kirkuk Children Hospital, Kirkuk Azadi Training Hospital, and the Cancer Center in Kirkuk, Iraq. The total size of the population was 1,384 nurses, including 590 in Kirkuk Children Hospital, 667 in Kirkuk Azadi Training Hospital, and 127 in the Cancer Center.). The minimum sample size that could represent a population of 1,384 nurses was calculated as 300 subjects when the study data were formulated according to the simple random sampling formula. A personal information form was created by the researcher following a review of the literature to determine the socio-demographic characteristics of the nurses, such as age, gender, marital status, number of children, educational status, financial status, name of the hospital, department, the status of working shifts, weekly working hours, presence of enough nurses in the department, and whether non-nursing tasks increased workload. Stress was assessed by using the 14-item version of the perceived stress scale (PSS). Each item on the PSS-14 is evaluated on a 5-point Likert-type scale with options ranging from never (0) to very often (4). Seven items (4th, 5th, 6th, 7th, 9th, 10th, and 13th items) containing positive statements are reverse scored. Scores on the

PSS-14 range from 0 to 56, with a high score indicating high perceived stress. Cronbach's alpha coefficient of the scale is 0.84.

Results: The current study showed that the mean age of the participants was 31.35±7.85, the mean work experience as a nurse was 7.32±7.39, and the mean weekly working hours was 46.77±7.01. It was determined that 56.5% of the participants were female, 70.3% were married, and that 35.6% did not have children. In addition, 95.4% of the participants had a diploma or a bachelor's degree, and 69.9% had more income than their expenses. While 56.2% of the participants worked in specialized units, 53.9% worked day shift permanently. Of the participants, 17.6% stated that there were enough nurses in their department, and 52.3% stated that non-nursing tasks increased their workload. The mean scores of the participants on the PSS were found to be 30.09±6.33. It was determined that 85% of them experienced a moderate level of stress. There is a significant differences between perceived stress of nurses and their educational level (t-test = 9.6; p value= 0.002).

Conclusion: The study concluded that nurses experienced a moderate level of perceived stress. There is a significant differences between perceived stress of nurses and their educational level in which nurses with diploma or bachelor's degree exhibited more stress than those with master degree..

2023, 60 pages

Keywords: Psychological Distress, Nurses, Hospitals.

ÖZET

HASTANELERDE ÇALIŞAN HEMŞİRELERDE ALGILANAN STRES VE İLİŞKİLİ FAKTÖRLER

Marwah Kamal Shukur AL-HAMAWNDY

Hemşirelik, Yüksek Lisans

Tez Danışmanı: Dr. Öğr. Üyesi Serap AÇIKGÖZ

Ocak 2023

İş stresi hemşirelerin iş doyumu ve işe bağlılık gibi performanslarını etkileyebilecek sorunlardan biridir. Hemşirelerin ruh sağlığını etkileyen süreçleri ortaya koymak, hemşirelerin sağlığını değerlendirmek ve hemşirelik hizmetlerinin etkili sunumunu yönetmek bakımından önemli bir halk sağlığı önceliğidir. Bu bağlamda çalışmanın amacı, Irak'ta hastanelerde çalışan hemşirelerde algılanan stres düzeyini ve stresle ilişkili faktörleri değerlendirmektir. Araştırma evrenini Irak'taki Kerkük şehrinde bulunan Kerkük Çocuk Hastanesi, Kerkük Azadi Eğitim Hastanesi ve Kanser Merkezi'nde görev yapan 1384 hemşire oluşturmuştur. Örneklem seçiminde olasılığa dayalı örnekleme yöntemlerinden biri olarak kabul edilen basit tesadüfi örnekleme yöntemi kullanılmış olup hesaplama sonuçlarına göre örneklem sayısının en az 300 olması gerektiği sonucuna varılmıştır. Araştırmaya gönüllü 306 hemşire katılmıştır. Araştırmanın yürütülmesi için etik izin ve kurum izni alınmıştır. Veri; Kişisel Bilgi Formu ve Algılanan Stres Ölçeği aracılığıyla toplanmıştır. Veri analizinde; tanımlayıcı istatistiksel metotları (sayı, yüzde, min-maks değerleri, ortalama ve standart sapma) kullanılmıştır. Ölçek güvenilirliğini test etmek amacıyla "Güvenilirlik Analizi" yapılmıştır. Kullanılan verilerin normal dağılıma uygunluğu test edilmiştir. Normal dağılıma sahip verilerde niceliksel verilerin karşılaştırılmasında iki bağımsız grup arasındaki fark için bağımsız örneklem t testi, ikiden fazla bağımsız grup karşılaştırılmasında ise tek yönlü varyans analizi uygulanmış ve fark bulunduğu durumda fark yaratan grubu bulmak için Bonferroni kullanılmıştır. Normal dağılıma sahip olmayan verilerde niceliksel verilerin karşılaştırılmasında iki bağımsız grup arasındaki fark için Mann Whitney U testi, ikiden fazla bağımsız grup karşılaştırılmasında ise Kruskal Wallis H testi uygulanmıştır. Normal dağılıma sahip olmayan sürekli değişkenler arasındaki ilişki Spearman korelasyon katsayısı ile

incelenmiştir. Araştırmaya katılan hemşirelerin yaş ortalaması 31,35±7,85, hemşire olarak çalıştıkları yıl ortalaması 7,32±7,39 ve haftalık çalışma süresi ortalaması 46,77±7,01 saattir. Katılımcıların %56,5'i kadın ve %70,3'ü evlidir. Katılımcıların %56,2'si özellikli birimlerde çalışmakta iken %53,9'u sürekli gündüz vardiyasında çalışmaktadır. Katılımcıların %17,6'sı çalıştıkları birimde yeterli sayıda hemşire bulunduğunu, %52,3'ü hemşirelik dışı işlerin iş yükünü artırdığını ifade etmiştir. Araştırmaya katılan hemşirelerin Algılanan Stres Ölçeği puan ortalaması 30,09±6,33 olup %85'inin orta düzeyde stres yaşadığı tespit edilmiştir. Katılımcıların eğitim durumlarına göre ölçek puanları arasında istatistiksel olarak anlamlı bir fark bulunmakta olup ($p<0,05$) eğitimi diploma ya da lisans düzeyinde olan katılımcıları daha yüksektir. Ölçek puanlarının yaş, çalışma yılı ve haftalık çalışma süresi değişkenleri ile ilişkisi ise istatistiksel olarak anlamlı değildir. Hemşirelerin orta düzeyde algılanan stres yaşadıkları, algılanan stres ile eğitim düzeyleri arasında ilişki olduğu tespit edilmiştir.

2023, 60 sayfa

Anahtar Kelimeler: Psikolojik Sıkıntı, Hastane, Hemşire.

PREFACE AND ACKNOWLEDGEMENTS

At the beginning, I would like to thank Allah for his godly kindness and his unlimited blessings for helping me out by enabling me to complete writing this thesis. I also want to express my gratitude for my supervisor, Dr. Serap Açıkgöz, who has directed me, sacrificed her precious time, and dedicated her thoughts to guide me. not to mention all the wise members of the university who are evaluating my thesis discussion. I would strongly like to show my appreciation for the Çankırı Karatekin University for their welcoming, cooperation, and support in completing our study in Turkye. My immediate family, my colleagues, and my close friends thank you for all your prayers and for being patient during my absence. Finally, I wanted to say thanks to everyone who assisted me, even with their prayers.

Marwah Kamal Shukur AL-HAMAWNDY
Çankırı-2023

CONTENTS

INDEX OF ABBREVIATIONS AND SYMBOLS

PSS	Percieved Stress Scale
WHO	Word Health Organization
COVID-19	Coronavirus Disease
CNS	Central Nervous System
ER	Emergency Room Nurses

LIST OF TABLES

1. INTRODUCTION

Mental health problems are becoming more prevalent among healthcare practitioners across the world (Barry and Ward 2017). Nursing, for example, is prone to stress and burnout because it requires frequent human interaction and emotional commitment. The clinical training component, in particular, is dynamic and demanding, and has been described by them as scenarios that create anxiety throughout their professional practice (Elliott 2002). Psychological stress has been linked to dangerous drug misuse (Newbury *et al*. 2001) and diminished empathy (Woloschuk *et al*. 2004), which can influence nurses' clinical performance (Tung *et al*. 2018). as well as their future working life. Stress has also been linked to major mental health illnesses, such as depression, which is one of the main causes of disability worldwide. Anxiety is common among nursing student in Arab nations, with a frequency of 28 percent (Woloschuk *et al*. 2004), about six times that of the overall population (Ferrari *et al*. 2013;WHO 2017). Furthermore, nursing is a predominantly female-dominated profession (Tung *et al*. 2018), and research reveals that female college students (Young *et al*. 2010; Buchanan *et al*. 2012; Steptoe *et al*. 2007). women more likely than men to experience depression (Olvera et al. 2019).

The Middle East, as with many regions around the world, suffers from a shortage of professional nurses (Shukri 2005; Sheikh *et al*. 2019). Previously published literature reported that a significant proportion of nursing may drop out before completing the program (Smith *et al*. 2019) as a result of stress. Additionally significant factors affecting general psychological health and well-being are its coping mechanisms (Shikai et al. 2007). In addition, published studies suggest that, among groups exposed to severe stress, their lifelong likelihood of mental health illnesses may be influenced by behavioral and emotional issues (Kim et al. 2003). Understanding the difficulties that nursing students face during their training, and also their compensatory techniques, is vital. This will make it possible for nursing school and educator to assess and using intervention and support program based on

research with the goal of lowering attrition in nurses training programs, which may then assist alleviate the local nurse shortages (Deary *et al*.2003).

Many studies have been done in the field of stress in nursing, including the study of (Teshome *et al*. 2021) entitled perceived stress and related variables among healthcare personnel working in the setting of COVID-19 pandemic in public health facilities of southern Ethiopia 2020. The study found that doctors in Iraq are most concerned about safety and working conditions. High stress and depression levels are linked to low job satisfaction. Stress or depression can also be caused by the following factors: reduced resources, shorter working hours, and sleep problems (Kamimura *et al*. 2018).

As according nurses' perceptions, Al-Nuaimi et al. (2021) identified the effect of job stressors on nurses' work performance. As a result of the study, nurses are subjected to a wide range of work-related stressor such as: the work environment; co-worker relationships; conflict with the supervisors; work load; painful situation; and a lack of knowledge and support among nurses. As a result of occupational stress in nursing, there is a negative association between nurses' job performance and satisfaction as well as their mental and physical health and quality of life.

Chaabane *et al*. (2021), An assessment of published studies on perceived stress, stressors, and coping mechanisms among student nurses in the Middle East and North Africa, studies have been carried out on coping techniques and stress levels in Middle East and North Africa, but the available data does not allow for a thorough investigation of the relationship between the two. Lack of country-specific data prohibits cross-country comparison. The number or intensity of stresses can be reduced by reviewing the curriculum and enhancing pupils' coping mechanisms. To lessen perceived stress, enhance teaching and learning and production, and minimize burnout among nursing students, they need guidance and counseling, as well as a supportive clinical training environment (Chaabane *et al*. 2021).

Aldarmasi and Alghamdi study (2021), “A multi-centric cross-sectional study conducted in Saudi Arabia examined the variables that affected healthcare professionals' perceptions of stress during the coronavirus pandemic”, current research shows that healthcare staff who worked through the COVID-19 pandemic are exposed to mild stress, which increases healthcare costs. (Çınar *et al*. 2021) study, “Stress perception and variables influencing COVID-19 among Turkish ER nurses”, it found that as a result of their working conditions, more than half of the ER nursing experienced stress that was above national standards throughout the pandemic. In stress management for emergency nurses, meeting physiological requirements and providing psychological counseling and counseling intervention may help reduce stress levels. The reported levels of stress experienced by ER nurses can really be decreased by lowering the effort, expand the frequency of nurses, and establishing coping mechanisms.

There is increasing pressure and tension among nurses working in Iraq in general, and this may be related to the political instability in the country or due to the spread of infectious diseases in it. The importance of studying in the city of Kirkuk stems from the increase in nursing pressure there, which may stem from co-workers, patients and others. However, this is the first study in the city of Kirkuk.

1.1 Aim of the research

This study was conducted to evaluate the perceived stress levels and stress-related factors in nurses working in hospitals in Iraq.

1.2 Research Questions

- What is the level of stress perceived by nurses?

- Do the perceived stress levels of nurses differ according to some socio-demographic characteristics?

- Is there a relationship between nurses' perceived stress levels and some socio-demographic characteristics?

1.3 Limitation of the study

- Place limits: Kirkuk, Iraq
- Time limits: 2023

2. GENERAL INFORMATION

Stress is the result of condition that causes physical, psychological, or psychological discomfort. Your body's reaction to everything that requires concentration or movement is stress. Everyone experiences stress to some extent. But your general health is significantly impacted by how you deal with stress (Scott, 2020).

2.1 The concept of stress

Stress is defined as a person's feeling to a disturbance in their biological or psychological balance. Stress faced by all living organisms is an inevitable part of life. This state of stress occurs automatically in response to physical, mental, and emotional stress. Stress can create positive and negative emotions, with physical or mental repercussions. Stress can come from a variety of reasons. The environment, body, thoughts and even the way we experience the world can contribute to stress levels in the body (Ersöğütçü and Şener, 2019).

Stress may be viewed as an ongoing interaction between a person and their surroundings. However, stress is a well-established and vital component of the etiology and maintenance of many inflammatory disorders, a term that is regularly redefined in disease-related scientific research. Stress can be defined as an organism's response until it responds to the situation, forcing it to act on the body at the same time and, if excessive, stretching the capacity of adaptive processes to the limit, leading to stressful illness and death (Bansal et al. Socio-economic factors, types of work, programs, competitive workloads, emotional disruptions, etc. Stress can act alone or mingle in groups and affect different life stages. Various ways have emerged to link traits associated with pathogen stress (Nasar, 2014).

• The autonomic nervous system and the CNS have a significant role in social and psychological stress.

• Indirect role of behavioral psychological stress

Changes that can cause psychological stress can indirectly change behaviors that pose a health risk, such as smoking, by changing behavior (Hidalgo, 2003). Alcohol, poor oral hygiene or poor dental compliance (Genco et al., 1998; Boyapati, 2007). This affects not only a decrease in the frequency and quality of oral hygiene, but also increases in tobacco use and changes in dietary habits (AbuAlrub, 2004). In particular, a fat diet that can contribute to immunological suppression by increasing cortisol production if overcooked (Genco et al, 1998). This leads to a decrease in overall health. Although they have not yet been proven to constitute absolute dangers, stress, sadness, and anxiety have been mentioned as potential influences on the illness in a number of observational studies. There has been extensive research on the potentially harmful effect of stress on medical health in general and on specific disorders (Axtelius et al., 1998; Akhter et al., 2005: Wimmer et al., 2002; Ng et al., 2006).

2.2 Work stress

The discussion about occupational stress is then impossible except to briefly describe the context in which caregivers do their work, at least briefly on burnout. In an interesting and comprehensive review of the subject, Schaufeli and Buunk (2003) characterize the employment of stress from burnout. The first refers to an adaptation process often accompanied by physical and mental symptoms, and the second determines the breaking point in the process itself, resulting from an imbalance between individual desires and response possibilities, and thus a long period of work stress (APA, 2014).

The difference between the two is that job stress is not accompanied by certain behaviors that form and define a particular type of behavior towards the job itself and the organization in burnout syndrome (Edú-Valsania et al., 2022).

Thus, it characterizes the experience of those who enthusiastically tackle their careers with high goals and expectations, during which anyone can suffer from a state of stress during burnout. For example, according to Pines (1993), those who expect to derive a sense of self from one's work. Those who do not have such expectations may suffer from job stress, but not from burnout. The latter is characterized by chronicity and various symptoms (Maslach, 1993).

Schaufeli and Enzmann (1998) defined the syndrome, a persistent, negative mental state that is strongly associated with the workplace affecting "normal" individuals and is characterized by fatigue, weakness, reduced feelings of influence, in the emergence of unhealthy attitude and actions in the job, as well as decreasing ambition. This psychological state develops gradually, but often remains unnoticed by the person concerned for a long time. It is the result of mismatches between individual intentions, expectations, and reality. Often times, the bait burns itself out because of the confrontational modes associated with the syndrome.”

Frustrated intentions, expectations, and inappropriate methods of coping play a role as prerequisites in the development of burnout (Maslach, 1993).

2.3 Work stressors in nurse

Nursing, by its nature, is a difficult task according to various studies. Workload including: unexpected hours of service, not enough time to complete scheduled tasks, staff shortages, working during breaks, many administrative or non-nursing interventions are potential sources of stress from the physical environment when it comes to working as a nurse (Petrovic, 2014).

The mismatch between what employers want and what nurses can do can endanger patients' health and lead to dangerous conditions. Various studies have found a link between the number of nurses on staff, excessive workload, stress, and musculoskeletal disorders (Petrovic, 2014).

The constant demand for new information and false speed puts nurses in a state of uncertainty and confusion, accompanied by fear of making a mistake, intense anxious reactions, and even fear of not being able to relax after work. Conflict between professionals appears to be a growing problem, especially among nurses and doctors. Lack of support from immediate supervisors, difficulties in relationships with co-workers, and inability to share experiences and emotions with other employees in the workplace are the biggest stressors at work. Workplace stressors for nurses in the twenty-first century are workplace demands, impaired social support, uncertainty and stress (Petrovic, 2014).

2.4 Studies on work stress in nurse

Stress at work affects nurses all around the world. 93percent of nurses in the United States, according to a survey, suffer significant level of stress (Bardhan et al., 2019). According to a research from China, 68.3% of nurses feel significant job stress (Gu et al., 2019). In Iran, the majority of nurses (63.47%) reported stress (Chatzigianni et al., 2018). In Saudi Arabia, 34.7percent of nurses experience work stress (Mohamed, 2019). In Slovenia, 56.5percent of people reported reported having occupational stress, according to a study.8 In Botswana, more nurses (74%) reported having job stress (Maphangela, 2015).

Due to a nursing shortage, there was a tremendous workload for nurses in Ethiopia. According to studies conducted across Ethiopia, the percentage of nurses who reported experiencing work-related stress ranged from 37.8percent to 66.2percent. Stress at work has a detrimental impact on both people and businesses. While the effects on individuals can include dissatisfaction among employees, decreased motivation, insomnia, mental trauma, depressed mood, anxiousness, aggressive behavior, loss of self-confidence, difficulty concentrating, and cardiovascular diseases, high cholesterol, and high blood sugar levels, it has been reported that increased depends on the organization and failure to meet organisation objectives have also occurred at the institutional level (Moustaka Eleni, 2007). 2016; Kassa et al., 2017; Godifay et al., 2018; Baye et al., 2020).

Also, stress increases the costs for healthcare and reduce job satisfactions. In addition, absenteeism and turnover among staff reduce the quality of healthcare services and customer satisfactions (Abdali Bardeh et al., 2015).

The impact of job stress on the society and economic life; When an employee is sick or suffers an occupational hazard, the company pays for their care and offers compensation, which lowers the employee success. Over $300 billion is spent in the US annually on various

accident kinds, insurance expenses, absenteeism, and worker turnover. According to O'Keefe et al. (2014), the cost of stress at work is almost 20 billion euros across 15 European nations.

According to world health organization, among the methods to solve work stress problem among nurses are to change the work demand by sharing the workload differently, to improve the knowledge and skill of the employees by training (Položki Vokić and Bogdanić, 2008), to create a fun working environment, to encourage new learning experiences among the staff. motivating staff with tangible and spiritual rewards (Abdali Bardeh et al., 2015).

Predictor variables of job stress among nurses included sociodemographic traits, behavioral traits, and elements of the work environment (work shifts, work group, job experience, week hours worked, allocated role, and work satisfaction) (Kassa et al., 2017; Mohamed, 2019; Baye). et al., 2020). In Africa, job stress is very common. A quarter of workers say their jobs are the most stressful, according to research on work-related stress, and around one-third of workers in most firms experience high levels of stress (Akweenda, 2016).

2.5 The role public health nursing in reducing the work stress of nursnig

Supervisors and nurse leaders can help to lessen stress at work. Creating a work climate whereby nurse are encouraged to perform their best job and care for people without being impacted by job stressors is really one of a nursing leader's most crucial duties (Nursing duq, 2022).

Creating a healthy work environment

- Nursing administrators may create and maintain productive workplaces by taking particular actions (Nursing dug, 2022).
- Respecting work-life balance requires nursing leadership and management to refrain from sending their teams after-hours emails or texts (Nursing dug, 2022).

- Offer psychiatric breaks: It's crucial for nursing professionals to put policies into place that mandate frequent breaks for all staff members all through the shift (Nursing dug, 2022).
- Clarify roles and anticipations: Nurse leaders may reduce ambiguity at work by thoroughly laying out what is expected of every group (Nursing dug, 2022).

Establish open channels of communication: Nurse managers may make sure that all nursing on the team are aware of the appropriate times and channels for sharing suggestions or grievances (Nursing dug, 2022).

3 MATERIAL AND METHOD

3.1 Study Design

This is a cross-sectional study.

3.2 Setting, population, and sample of the study

The population of the study consisted of nurses working in Kirkuk Children Hospital, Kirkuk Azadi Training Hospital, and the Cancer Center in Kirkuk, Iraq. The total size of the population was 1,384 nurses, including 590 in Kirkuk Children Hospital, 667 in Kirkuk Azadi Training Hospital, and 127 in the Cancer Center. The simple random sampling method, which is accepted as one of the probability-based sampling methods, was used for sample selection. The formula, n=N x t2 x p x q / d2 (N-1) + t2 x p x q, was used for the calculation of the sample (Karasar, 2014). The minimum sample size that could represent a population of 1,384 nurses was calculated as 300 subjects when the study data were formulated according to the simple random sampling formula, based on the theoretical t value of the study (1.96), a confidence interval of 95%, and a sampling error of 0.05. Accordingly, the study was conducted with the participation of 306 voluntary nurses.

The power of the study was calculated on the "G.Power-3.1.9.2" software package. As a result of the analysis applied to a sample size of 306 individuals, the effect size was found as 0.90 at α=0.05 level. Also, the power of the study that was calculated as post-hoc was found as 0.89. The minimum required power value for post hoc analysis is 0.67 (….). Accordingly, the power of the study was found at an acceptable level, and the number of data (306) was adequate.

3.3 Inclusion criteria

- A nurse working in one of the hospitals where the research was planned to be conducted.
- A native Arabic speaker
- Volunteer to participate in the research

3.4 Exclusion criteria

- Not filling out data collection tools completely

3.5 Data colecation tools

Personal Information Form

This 13-item form was created by the researcher following a review of the literature to determine the socio-demographic characteristics of the nurses, such as age, gender, marital status, number of children, educational status, financial status, name of the hospital, department, the status of working shifts, weekly working hours, presence of enough nurses in the department, and whether non-nursing tasks increased workload (See Appendix 1).

The *Perceived Stress Scale (PSS)*

Cohen, Kamarck, and Mermelstein (1983) developed this scale to measure how stressful one perceives certain situations in their life. In addition to the 14-item form of the scale, there are two more forms with 10 and 4 items. In this study, the 14-item version of the scale was used. Each item on the PSS-14 is evaluated on a 5-point Likert-type scale with options ranging from never (0) to very often (4). Seven items (4th, 5th, 6th, 7th, 9th, 10^{th}, and 13^{th} items) containing positive statements are reverse scored. Scores on the PSS-14 range from 0 to 56,

with a high score indicating high perceived stress. Cronbach's alpha coefficient of the scale is 0.84.

Almadi et al. (2012) adapted the 14-item version of the scale into Arabic. As in the original scale, each item is evaluated on a 5-point Likert-type scale using options that vary between never (0) to very often (4). In addition, 7 items with positive expressions (4th, 5th, 6th, 7th, 9th, 10^{th}, and 13^{th} items) are reverse scored as in the original scale. Scores on the scale range between 0 and 56, with a high score showing high perceived stress. As Higgins (2018) previously coded, scores on the scale are interpreted as follows: 0 - 18, low stress; 19 - 37, moderate stress; 38 - 56, high stress. Cronbach's alpha coefficient of the Arabic version of the scale was calculated as 0.80 (See Appendix 2).

In this study, the reliability of the PSS was tested. Reliability analysis was carried out to test whether the statements on the scale showed consistency and whether all of the statements measured the same subject (Ural & Kılıç, 2006: 286). In the reliability analysis, Cronbach's alpha coefficient value, which varies between 0 and 1, is interpreted as follows: 0.00-0.40, not reliable; 0.40-0.60, low reliability; 0.60-0.80, quite reliable; 0.80-1.00, highly reliable (Tavşancıl, 2005: 19). Cronbach's alpha coefficient of the PSS was calculated as 0.514, and it was determined that the scale was reliable.

3.6 Data collection

The nurses were visited in their units in the hospitals where the research was conducted. Volunteer nurses filled out the data collection tools in approximately 10 minutes.

3.7 Variables of the study

Dependent variable: Perceived stress level

Independent variables: Age, gender, marital status, number of children in the family, education level, financial status, name of the hospital in Kirkuk province, department, the status of working shifts, weekly working hours, presence of enough nurses in the department, and whether non-nursing tasks increase workload

3.8 Ethical approval

Approval of the Iraq Ethics Committee (Protocol Number 202134, Date 1\11\2022) was obtained to collect study data (See Appendix 3). Institutional permission was obtained from the hospitals where the research was conducted (See Appendix 4). Necessary permission was obtained for using the Arabic version of the scale in the study from the author who adapted it (See Appendix 5). On the first page of the data collection form, the purpose of the research was explained, and there was also a section regarding the approval of participation in the research. A sample of the consent form was given to the nurses.

3.9 Data analysis

The study data were analyzed using the trial version of SPSS for Windows 25.0 software package. During the evaluation of the data, descriptive statistical methods (frequency, percentage, min-max values, mean and standard deviation) were used. To test the reliability of the scale, a reliability analysis was performed. The suitability of the study data for normal distribution was tested. Compliance with the normal distribution can be examined with the Q-Q Plot (Chan, 2003: 280-285). In addition, the normal distribution of the data used depends on the skewness and kurtosis values that vary between ±3 (Shao, 2002). In the comparison of the normally distributed quantitative data, independent samples t-test was used for the difference between two independent groups, and the one-way analysis of variance was applied for comparing more than two independent groups. In case of a difference, the Bonferroni test was used to find the group that caused the difference. The Mann-Whitney U test was used for the difference between two independent groups in the comparison of non-

normally distributed quantitative data, and the Kruskal-Wallis H test was employed for the comparison of more than two independent groups. The relationship between non-normally distributed continuous variables was examined using the Spearman correlation coefficient.

The results of the normality analysis for the PSS used in the study are given in Table 3.1. Skewness and kurtosis values of the data between ±3 indicates a normal distribution. When the results were examined, it was found that the PSS scores did not have a normal distribution.

Table 3.1 The results of the normality analysis of the PSS and its sub-dimensions used in the study

The scale	Skewness	Kurtosis	Result
The Perceived Stress Scale	-0.396	1.432	Non-normal

4 RESULTS

Descriptive findings about participants' characteristics are presented in Table 4.1. As seen in the table, the mean age of the participants was 31.35±7.85, the mean work experience as a nurse was 7.32±7.39, and the mean weekly working hours was 46.77±7.01. It was determined that 56.5% of the participants were female, 70.3% were married, and that 64.4% did not have children. In addition, 95.4% of the participants had a diploma or a bachelor's degree, and 69.9% had more income than their expenses. While 56.2% of the participants worked in specialized units, 53.9% worked day shift permanently. Of the participants, 17.6% stated that there were enough nurses in their department, and 52.3% stated that non-nursing tasks increased their workload.

Table 4.1 Distribution of participants by their socio-demographic characteristics

Variables		$\bar{X}$	**SD**
Age		31,35	7,85
Mean work experience (year)		7,32	7,39
Weekly working hours (hour)		46,77	7,01
Variables		**n**	**%**
Gender	Female	173	56,5
	Male	133	43,5
Marital status	Single	91	29,7
	Married	215	70,3
Number of children	No children	109	35,6
	One child	67	21,9
	Two children	76	24,8
	Three or more children	54	17,6
Education level	Diploma or bachelor's degree	292	95,4
	Master's degree	14	4,6
Financial status	Comfortable	214	69,9
	Variable	84	27,5
	Tight	8	2,6

Table 4.1 Distribution of participants by their socio-demographic characteristics (continued)

Variables		n	%
Name of hospital in the city of Kirkuk	Kirkuk Azadi Training Hospital	146	47,7
	Cancer Center	56	18,3
	Kirkuk Children Hospital	104	34
Department	Specialized departments*	172	56,2
	Inpatient departments	112	36,6
	Education and management unit	22	7,2
Shift work	Permanent day shift	165	53,9
	Rotational shift	141	46,1
Presence of enough nurses in the department	Adequate	54	17,6
	Inadequate	252	82,4
Whether non-nursing tasks increase the workload	Yes	160	52,3
	No	146	47,7
Total		**306**	**100,0**

*Operating theater; CCU (Critical Care Unit); RCU (Respiratory Care Unit); emergency

Descriptive statistics of the participants' PSS scores for the research question "*What is the level of stress perceived by nurses?"* are given in Table 4.2. The mean scores of the participants on the PSS were found to be 30.09±6.33. The perceived stress levels of the participants are presented in Table 4.3. It was determined that 85% of them experienced a moderate level of stress.

Table 4.2 Descriptive statistics for the Perceived Stress Scale

The scale and its sub-dimensions	Min.	Max.	SS	Standard deviation
The Perceived Stress Scale	8,00	48,00	30,09	6,33

Table 4.3 The perceived stress levels of the participants

Variables		n	%
Level of stress	Low	15	4,9
	Moderate	260	85,0
	High	31	10,1
	Total	306	100,0

The mean scores of the participants on the PSS were compared according to their socio-demographic characteristics for the research question "*Do the perceived stress levels of nurses differ according to some socio-demographic characteristics?"*(See Table 4.5). To compare participants' scores on the PSS according to their socio-demographic characteristics, the Mann-Whitney U test was used for the comparison of two independent groups, and the Kruskal-Wallis H test was employed for the comparison of more than two independent groups. There was a statistically significant difference between participants' scores on the PSS according to their educational status ($p<0.05$). It was determined that the participants with a diploma or bachelor's degree had higher scores on the scale than those with a master's degree.

Table 4.4 Comparison of participants' scores on the PSS according to their socio-demographic characteristics

Variables		**The Perceived Stress Scale**		
		$\bar{X}$	**SD**	**M**
Gender	Female	30,41	5,55	30,00
	Male	29,68	7,23	30,00
	Test value	-0,875		
	p	0,381		
Marital status	Single	30,65	7,06	31,00
	Married	29,86	6,00	29,00
	Test value	-1,801		
	p	0,072		
Number of children	No children	30,20	6,24	31,00
	One child	31,61	6,16	30,00
	Two children	29,74	5,45	28,00
	Three or more children	28,50	7,52	29,00
	Test value	3,541		
	p	0,315		
Education level	Diploma or bachelor's degree	30,35	6,16	30,00
	Master's degree	24,79	7,75	25,00
	Test value	**9,691**		
	p	**0,002***		
Financial status	Comfortable	29,81	6,47	30,00
	Variable	30,52	6,14	30,00
	Test value	0,533		
	p	0,465		
Department	Specialized department[1]	29,84	6,37	30,00
	Inpatient services[2]	30,70	6,06	31,50

Table 4.4 Comparison of participants' scores on the PSS according to their socio-demographic characteristics (continued)

	Education and management unit[3]	29,05	7,44	27,00
	Test value	2,192		
		0,334		
	p	-		
Shift work	Permanent day shift	30,01	6,96	32,00
	Rotational shift	30,22	5,58	29,00
	Test value	0,036		
	p	0,849		
Presence of enough nurses in the department	Adequate	29,13	7,59	32,00
	Inadequate	30,30	6,03	30,00
	Test value	0,179		
	p	0,672		
Whether non-nursing tasks increase the workload	Yes	30,28	6,70	30,00
	No	29,90	5,92	29,50
	Test value	0,568		
	p	0,451		

The results of the Spearman correlation analysis performed to investigate the relationship between the scale scores and the variables of age, working year and weekly working time to examine the " *Do the perceived stress levels of nurses differ according to some socio-demographic characteristics?*" research question are given in the table 4.5 and it is seen that there is no statistically significant relationship.

Table 4.5 The relationship of the scale scores with the variables of age, working years, and weekly working hours

		PSS
Age	r	-0,104
	p	0,070
Mean work experience in nursing (years)	r	-0,073
	p	0,204
Weekly working hours (hour)	r	-0,092
	p	0,108

5 DISCUSSION

Demographic data of the study sample

The distribution of socio-demographic characteristic for study group are illustrated in table (4.1). According to this table, the mean age of the samples was 31.35±7.85. Similar results were obtained by Lee et al. (2022) who, between May and June 2021, examined 85 nurse from a special icu (ICU) of a Taiwanese hospital for felt stress and discovered that the nurses' mean age was 30.6 years; Mpasa et al. (2020) also found that most samples were between 25 and 39 years old (36%) with a mean of (32.1±4.82). The majority of the 360 nurses in a comparable comparative research on stress levels by Jordan et al. (2016) were discovered to be between the ages of 22 and 44; Masa'Deh et al. (2017) discovered that the age of the nurses varied from 22 to 44 year, with a mean of 34; Lin et al. (2011) found that the mean age of the nurse was 30.71 years . Some other studies have found larger mean age as that recorded by Giri et al. (2022) who found that the majority of nurses' ages (67.7%) were between (30-45 years). However, some studies found lower mean of age. Baye et al. (2020) found that (64.3%) of participated nurses were between 25-34 years. However, Wu et al. (2021) recorded lower average age for nurses 19.13 (SD ±0.42); Kannappan and Veigas (2022) found that about (64.6%) of nurses were with ages between (21-25).

The current study also demonstrated that women make up the majority of nurses (56.5percent); these findings concur with Lee et al. (2022), who discovered that women made up the majority of critical care nurses (89.4 percent); Kannappan and Veigas (2022) determined that 56.5% of the samples were female; Masa'Deh et al. (2017) found that almost half of the nurses were females; Babore et al. When stress and coping mechanisms among Italian health care professionals during the COVID-19 pandemic were examined, it was discovered that the majority of the samples (80.3%) were women. Koen et al (2011) found that about (84%) of investigated nurses were female. However, Baye et al. (2020) found most

participated nurses were male (55%); Giri et al. (2022) who found that the (58.2%) of nurses were male.

The present study has also found that (95.4%) of the nurses were Diploma or Bachelor's Degree in Nursing, this result agrees with previous studies that were conducted in another countries; Lin et al. (2011) found that (81.5%) of the nurses had Bachelor's degree; According to Masa'Deh et al. (2017), the great majority of nurse (91.1%) had bachelor's degrees, while the remainder had master's degrees. This result can be interpreted by that Bachelor's degree in an intermediate stage between primary school stage and postgraduate school and this comes in accordance with the results of the current study that found most nurses are within the young ages.

The present study has also found about (70.3%) of the nurses were married, this result comes in agreement with Giri et al. (2022) who found that the (65%) of nurses were married. However, Lee et al. (2022) found that the majority of nurses were single (81.2%). Baye et al. (2020) found that less than half of the participated nurses were male (48.2%); Kannappan and Veigas (2022) found that only about (29.2%) were married. This result can be interpreted by the differences in the social habits,

Regarding economic status, the current results showed that about 69.9% had more income than their expenses (comfortable); this result comes in agreement with Masa'Deh et al. (2017) investigated 312 nurses in Jordan and found that about (27%) were comfortable; varies (44%); and tight (28%).

Regarding number of children, the current results showed that about 35.6% of them did not have children, this comes in agreement with Masa'Deh et al. (2017) who found that nurses with no children were (20.9%); those with one child (18.1%); those with two children (40,8%), those with three children (20.2%). Kannappan and Veigas (2022) found that nurses with no children were (32%) and those with one child (37%).

The present study found that about 56.2% of the samples worked in specialized units, 53.9% worked day shift permanently. A same results was taken by Baye et al. (2020) found that about (67%) of the participated nurses worked day shift permanently.

The findings of these research differed, and this might be related to variations in sample group, geography, and timing (before and after COVID-19).

Nurses' Perceived stress

The current study has shown , it shows that The mean scores of the samples on the PSS were found to be 30.09±6.33. It was determined that 85% of them experienced a moderate level of stress. This agrees with Lee et al. (2022) who found the mean score of perceived stress level of nurses in Taiwan during COVID-19 was 25.4 (SD = 6.2), and most nurses were perceived to have moderate stress (85.9%). Wu et al. (2021) also conducted a study in Taiwan and recorded the stress average score of 36.65 ±15.95. Stress was mild in 26.7% (n = 193) of nurses, moderate in 64.5% (n = 467) of nurses, and moderate to severe in 8.8% (n = 64) of nurses. A similar result was found in a study presented by Koen et al (2011) on the effect of stress level and the coping mechanism on professional nurses (N = 312) working in public and private hospitals in South Africa and found 92% of the nurses reported moderate to very high stress levels and only 8% reported having low or very low stress . Rafati et al., (2020) conducted a study in Iran and found that 35 (8.3%) nurses had low, 230 (54.5%) moderate, and 155 (36.7%) high stress. Giri et al. (2022) investigated 422 Nepali healthcare workers working during the COVID-19 pandemic in different healthcare facilities and found that almost 3% of the HCWs experienced high perceived stress, 9.5% perceived low stress whereas 87.6% perceived moderate stress,

Some studies recorded higher levels of perceived stress, as that recorded by Atanes et al. (2015) who performed a correlational cross-sectional study in a purposive sample of

Brazilian primary health care professionals and found the mean score of perceived stress level among nurses was 42.2±13.9.

On the contrast, low perceived stress among nurses was recorded by Kannappan, and Veigas (2022) who found that the mean stress score was 15.89 with a SD of 7.06 for registered nurses employed in Indian hospitals. Babore et al. (2020) investigared Italian health care workers and found that the mean perceived stress was 17.47. 310 nurses from five different hospitals in Jordan who work in different departments, another non-random convenience sample. When stress levels were looked at, the total mean was 22.57. This study found that nurses in mental units felt the most stress, following by nurses working (ONs), ICU/CCU nurses, and ER nurses, in that order. The least stressed nurses were those working in medicine and surgery (Masa'Deh et al., 2017). A cross-sectional investigation was carried out by UL Huda et al. (2012) at the Security Forces Hospital in Riyadh, Kingdom of Saudi Arabia, during the COVID Pandemic. The mean PSS-10 score ranged from 11 to 29, with a standard deviation of 4.61. Six nurses (10%) experienced severe stress, 52 (86.7%) reported moderate stress, and two (3.3%) experienced stress free.

According to Leonelli et al. (2017), healthcare practitioners, nurses, and doctors who had worked in the same team for at least a year had higher PS levels than those who had not. When working in an organisation behavior that was more resistive or less effective, as well as in circumstances where the team's organizational climate was perceived as stressful and then when the climate's functioning was low, nurses appeared to face the most stress. Previous research shown that nurses who worked in teams with a less skilled culture were more anxious when there was insufficient planning or that they had issues with their bosses (Galdikiene et al., 2019).

Association between Nurses' stress and their demographic data

The results of the current study have shown that there is a significant association ($p<0.05$) between PSS scores of nurses and their educational levels. This result comes in agreement with Kannappan, and Veigas (2022) who reported a significant association was observed between perceived stress and the level of education of nurses ($\chi 2 = 6.936$; $p = 0.008$).

Such findings were made by Lee et al. (2022), who discovered a strong relationship between educational level and reported stress among nurses caring for COVID-19 outbreak patients in critical condition (p value = 0.026). Additionally, Sidra & Iftikhar (2020) discovered that medical nurses felt stress to be higher than mental nurses (p=0.001). According to research by Rafati et al. (2020), nursing students with academically educated fathers reported considerably less stress than those with fathers with only a high school diploma or less training (Mean Difference= 3.53, p = 0.015).

6 CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

According to the results obtained by the current study, it is concluded that :

- Nurses experienced a moderate level of perceived stress.

- There is a statistically significant difference between perceived stress of nurses and their educational level in which nurses with diploma or bachelor's degree exhibited more stress than those with master degree.

6.2 Recommendations

Based It is recommended to :

- Conducting further studies about the relationship between perceived stress of nurses and their job satisfaction.

- Conducting further studies about the effect of an instructional program in relieving perceived stress of nurses.

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APPENDICES

APPENDIX 1. Personal Information Form

APPENDIX 2 ***The Perceived Stress Scale (PSS)*** **(English)**

The Perceived Stress Scale (PSS) **(**Arabic**)**

APPENDİX 3. Ethics committee of Iraq (Turkish)

Ethics committee of Iraq (Arabic)

APPENDİX 4. Institutional permission (Turkish)

Institutional permission (**Arabic**)

APPENDIX 5. Permission for *the perceived stress scale (pss)*

CURRICULUM VITAE

Name-Surname : Marwah Kamal Shukur AL-HAMAWNDY

Place and date of birth

Contact address and phone :
Language Skills: