Mutah University
College of Graduate Studies

Prevalence of depression, anxiety and stress symptoms among Emergency physicians at Al-Bashir Hospital, Jordan

Prepared by
Daher Al-Tarawneh

Supervised by
DR. Munir Abu Helalah

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أعضاء اللجنـة:	التوقيـع	
د. منير أحمد عوض ابو هلالة		مشرفا ومقررا
د. فارس عبدالكريم طالب الصرايره		عضوا
د. أسراء محمد احمد الرواشده		عضوا
د.احمد محمود احمد الخرابشه		عضو خارجي

عميد كلية الدراسات العليا

أ.د مخلد سليمان الطراونة

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DEDICATION

This work is heartily and proudly dedicated to the people who have inspired me and to those who inspire people everywhere. My special thanks to my loving parents, my wife and family, my classmates and circle of friends who stood by me in the midst of difficulties while I worked on this thesis, and to the faculty and staff of Mutah University.

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"In the name of Allah, the Merciful and the Gracious."

First of all, I praise God Almighty for giving me this opportunity and the ability to succeed.

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LIST OF ABBREVIATIONS

MHPSS	:	Mental Health and Psychosocial Support
PTSD	:	Post-Traumatic Stress Disorder
mhGAP	:	Mental Health Gap Action Program
SDGs	:	Sustainable Development Goals
WHP	:	Workplace Health Promotion
EU-OSHA	:	European Agency for Safety and Health at Work
DASS	:	Depression Anxiety Stress Scale
EMS	:	Emergency Medical Services
EMRs	:	Electronic Medical Records
EMTs	:	Emergency Medical Technicians
CDD	:	Civil Defense Directorate
EMSs	:	Emergency Medical Services System
ER	:	Emergency Room
SOP	:	Standard Operating Procedure
SOS	:	Sinusoidal Obstruction Syndrome
ED	:	Emergency Department
SARS	:	Severe Acute Respiratory Syndrome
NGOs	:	Non-Governmental Organizations
RMS	:	Royal Medical Service
UNRWA	:	United Nations Relief and Works Agency
MOH	:	Minister of Health
SPSS	:	Statistical Package for the Social Sciences
WHO	:	World Health Organization

ABSTRACT

Prevalence of depression, anxiety and stress symptoms among Emergency physicians at Al-Bashir Hospital, Jordan

Daher Al-Tarawneh

Mutah University, 2023

Introduction: Psychological problems are related to key risk factors associated with working in the emergency department, such as occupational stress, fatigue, sleep quality, chronic pain, physical activity, and perceived social support and quality of life. This study aims to highlight depression, anxiety, and stress symptoms among physicians in the emergency department of Al-Bashir Hospital.

Methodology: A cross-sectional study was conducted among 107 physicians in the emergency department of Al-Bashir Hospital in Amman between June and December 2022. Structured questionnaires based on the Depression, Anxiety, and Stress Scale (DASS-21) were used to collect data from the study participants.

Results: The results show that 32 (29.9%) and 27 (25.2%) of the physicians suffer from severe and moderate depression respectively, 40 (37.3%) and 21 (19.6%) of the physicians suffer from severe and moderate anxiety respectively, and 31 (29.0%) and 23 (21.5%) of the sample suffer from severe and moderate stress respectively. The main identified risk factors for these psychological manifestations were: Bullying and verbal abuse, social problems and financial difficulties. Physicians with stress, anxiety or depression had significantly more work stress and fatigue and a poorer quality of life than physicians without these complaints. Night shifts, on-call duties, lonely work, less free time outside work and other factors contribute to stress, anxiety and depression among physicians.

Conclusion: The study has revealed that anxiety, depression, and stress were highly prevalent amongst emergency physicians. They are associated with greater work stress, fatigue, poorer sleep quality, and lower perceptions of social support. It is recommended to conduct research particularly in interventional programs that target organizational and occupational stress, fatigue, sleep quality, chronic pain, and social support.

Keywords: Anxiety, Depression, Stress, Emergency, Al Bashir Hospital, DASS-21

الملخص

انتشار أعراض الاكتئاب والقلق والتوتر بين أطباء الطوارئ في مستشفى البشير ، الأردن

ظاهر الطراونة

جامعة مؤتة 2023

مقدمة: ترتبط المشكلات النفسية بعوامل الخطر الرئيسية المرتبطة بالعمل في قسم الطوارئ مثل الإجهاد المهني ، والتعب ، ونوعية النوم ، والألم المزمن ، والنشاط البدني ، والدعم الاجتماعي المتصور ونوعية الحياة. تناولت هذه الدراسة أعراض الاكتئاب والقلق والتوتر لدى الأطباء في قسم الطوارئ بمستشفى البشير.

المنهجية: أجريت دراسة مقطعية على 107 أطباء في قسم الطوارئ في مستشفى البشير في عمان بين يونيو وديسمبر 2022. واستخدمت استبيانات منظمة على أساس مقياس الاكتئاب والقلق والتوتر **(DASS-21)** لجمع بيانات من المشاركين في الدراسة.

النتائج: بينت النتائج أن 32 (29.9٪) و 27 (25.2٪) من الأطباء يعانون من الاكتئاب الشديد والمتوسط على التوالي. 40 (37.3٪) و 21 (19.6٪) من العينة يعانون من قلق شديد ومتوسط على التوالي ؛ و 31 (29.0٪) و 23 (21.5٪) من العينة يعانون من ضغوط شديدة ومتوسطة على التوالي. كانت عوامل الخطر الرئيسية التي تم تحديدها لهذه المظاهر النفسية هي: التعرض للمضايقة والإساءة اللفظية والمشاكل الاجتماعية والصعوبات المالية. يعاني الأطباء المصابون بالتوتر أو القلق أو الاكتئاب من ضغوط عمل وإرهاق أكبر وانخفاض مؤشر جودة الحياة مقارنة بالأطباء الذين لا يعانون من هذه الظروف. نوبات العمل الليلية ، واجبات تحت الطلب ، والعمل المنفرد ، ووقت فراغ أقل خارج العمل ، وعوامل أخرى تساهم في التوتر والقلق والاكتئاب بين الأطباء.

الخلاصة: كشفت الدراسة أن القلق والاكتئاب والتوتر كانت منتشرة بشكل كبير بين أطباء الطوارئ. وهي مرتبطة بضغوط عمل أكبر ، وتعب ، ونوعية نوم أقل ، وتصورات أقل للدعم الاجتماعي. يوصى بإجراء البحوث خاصة في البرامج التدخلية التي تستهدف الإجهاد التنظيمي والمهني ، والتعب ، ونوعية النوم ، والألم المزمن ، والدعم الاجتماعي.

الكلمات المفتاحية: القلق ، الاكتئاب ، الضغط النفسي ، الطوارئ ، مستشفى البشير

CHAPTER ONE
INTRODUCTION

1.1 The Research Background

Work-related mental health is now widely recognized as a global problem that affects every workplace, and therefore every worker, in poor and middle-income countries as well as in developed countries (Gray et al., 2019). It is worth noting that the most valuable asset of any company is its employees (Collings et al., 2018). Consequently, the well-being and health of workers are critical to a company's optimal performance and production of a company (Sovold et al., 2021). Accordingly, Abma et al. (2019) emphasizes that without 'workplace health', a person cannot contribute to society or to their own well-being. When 'workplace health' is threatened, meaningful work and socio-economic progress are difficult to achieve. The importance of mental illness cannot be overstated. According to Vaiciene et al. (2022), anxiety, depression and stress are more prevalent in public sectors such as education and healthcare. In other words, demanding professions are associated with poor mental or psychological health for various reasons such as long working hours and night shifts (Harvey et al., 2017).

Undoubtedly, medicine is one of the most demanding professions, which negatively affects physicians' emotional, social and physical health, as well as their performance (Alrawashdeh et al., 2021). As a result, Lilley et al. (2016) noted that in emergency situations, physicians are the first responders who provide emergency medical care. In their work, physicians are constantly exposed to horrific events, violence, stress, abuse and other human suffering, including shift work and workplace disputes. These workplace stresses have a negative impact on mental health and affect their work performance, personal lives and quality of life in general (Trumello et al., 2020).

In this type of demanding work, healthcare providers are at higher risk of developing anxiety, stress or depression, as research has shown that the constant stress these professionals face can have a negative impact on overall mental well-being (Naser et al., 2020). Poor mental health of healthcare professionals can also affect the quality of their work, which in turn can have a significant impact on the quality of care they provide to patients, which inevitably affects patient health (De Kock et al., 2021). Considering that healthcare is provided around the clock, this should be a cause for concern, as any impairment in the optimal cognitive performance of healthcare workers puts both workers and patients at risk (Cecil & Glass, 2015).

Accordingly, this work was studied to obtain an assessment of the mental health of physicians working in the emergency department of Al-Bashir Hospital.

1.2 Background of the Study

Healthcare workers, especially physicians, are prone to stress, anxiety, and depression, according to a large number of publications worldwide (Salari et al., 2020). Several studies examine these terms individually and in the context of mental health problems. Due to the rigorous and demanding education and training of physicians, previous research suggests that physicians are more prone to anxiety, stress, and depression (Civantos et al., 2020). In addition, (Ali & El-Sherbini, 2018; Stehman et al., 2019) have identified numerous stressors, including (a) interactions with colleagues, professors, and patients; (b) dealing with sick and dying patients; (c) the medical environment; (d) examinations; (e) increasing workload and tasks; and (f) a lack of free time. Several studies have found that physicians around the world are similarly stressed, with some culture-related exceptions (Lo et al., 2018).

As Olawale et al. (2017) have noted, stress has become an important issue in medicine, in part because medical treatment involves human lives and mistakes can be costly and often irreversible. As might be expected, Grover et al. (2020) estimate that physicians, nurses and other healthcare workers are expected to be in a "perfect state of mind, free from morbid anxiety and worry" in order to fulfil the immense responsibilities expected of them. There is strong evidence that stress in healthcare has a negative impact on healthcare workers. Robertson and Long (2018) have also recognized that lack of cooperation, absenteeism, alcohol and drug abuse, anxiety and depression, and even suicide are possible side effects.

In general, depression is characterized by chronic sadness and loss of interest in normally enjoyable activities (McMurray et al., 2020). A mixture of circumstances, including stress, home life, work commitments and physician workload, usually causes it. Miao et al. (2021) estimated that 300 million people worldwide suffer from depression, representing 4.4% of the world's population. Anxiety is thought to affect almost as many people as depression, as many people suffer from both conditions simultaneously. Anxiety and depression affect people's mood and can be recognized (Widiger & Oltmanns, 2017).

Everyone suffers from anxiety at some point in their lives. According to G. Perrotta (2019), anxiety is an anxious feeling characterized by signs such as trembling, restlessness, and feelings of tension. Similarly, Milne and Munro (2020) confirm that anxiety disorders cause people to be anxious, fearful, restless and agitated. These disorders affect people's emotions and behaviour and often lead to physical and emotional

symptoms. While mild anxiety is vague and worrisome, severe anxiety can interfere with daily life (Kazmi et al., 2020). Research has shown that medical students experience personal anxiety during medical school and later in their careers, which can even reach the level of burnout (Pokhrel et al., 2020).

Thus, the aim of the study is therefore to investigate the epidemiology of depression, anxiety, and stress symptoms and to assess the main risk factors contributing to mental health problems among emergency physicians in Jordan.

1.3 Mental Health

According to the World Health Organization's definition (2020), mental health refers to the ability to maintain positive relationships, perform useful tasks and face difficulties and changes with a positive attitude. Mental illness can develop when a person's mental health deviates. "The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)" describes a mental disorder as a symptom that is associated with significant distress or functional limitations in a person's socioeconomic, occupational, or other important aspect of experience and is associated with significant clinical disturbance in mental abilities or emotion regulation. The severity of impairment in daily functioning may not meet the criteria for a diagnosis, but still causes severe problems (Carter, 2014; Edition, 2013).

1.3.1 Stress

Nowadays, the term "stress" is used to describe everything from early malaise to anxiety due to depression (Crocq, 2022). According to Hessels et al. (2017), stress is an impairment experienced by individuals due to unreasonable expectations and demands at work. As reported by Ahlers (2016), the International Labour Organization (ILO) defines stress as harmful emotional and physical impairment caused by a mismatch between the demands and pressures and the individual's actual resources and abilities to cope with them. Frenkel et al. (2021) also define stress as what people experience when they are confronted with unusual demands or opportunities and do not know how to deal with them. Pressure and tension are the feelings associated with it. Stress can thus be defined as any event that puts a strain on a person's ability to cope. The definition of stress has evolved over time. the term "stress". defined as "a reaction of the body to any desire for change". Selye also explained that good stress (called eustress) can spur someone to behave well and adapt, for example to do well on an exam, while bad stress (called distress) can lead to anxiety, illness or other problems (Crocq, 2022).

1.3.2 Anxiety

It is an anxious state characterized by symptoms such as nervousness, worry and stress (Jacob & Sharma, 2018). These circumstances have an impact on our emotions and behaviour. According to Thompson et al. (2017), many physicians do not adequately care for themselves due to stigma (whether feared or actual), overwork and denial of vulnerability. Regardless of their specialty, physicians are not impervious to stress or the situations they encounter as part of their daily work (Riley et al., 2018). Anxiety disorders are exceptionally common in both the general population and among professionals. Not all anxiety is unhealthy, but it becomes pathological when anxiety is significant and long lasting. It not only affects quality of life, but also work efficiency (Fan et al., 2020).

1.3.3 Depression

People with this disorder often experience feelings of melancholy, worthlessness, fatigue, sleep and appetite disturbances, and lack of attention (Avasthi & Grover, 2018). Atif et al. (2016) examined the prevalence of depression and anxiety among physicians in Lahore, Pakistan, and discovered a significant association between anxiety and depression. In other words, anxious people are more likely to be depressed than sad people. In the survey, 34% of physicians suffered from mild to moderate anxiety, while 24% suffered from mild to moderate depression. According to Gaiha et al. (2020) , mental or psychological illness is underreported worldwide because people are afraid of being stigmatized. As a result, many people, including health workers, are unprepared to be screened or treated. Spoorthy et al. (2020) therefore emphasize that physicians are at an increased risk of developing mental health problems, which can lead to depression and anxiety, because of their profession.

1.4 Depression, Anxiety and Stress among General Population

Mental illness is the most common cause of disability worldwide (Singla et al., 2017). Anxiety and depression syndromes are one of the leading causes of non-fatal health problems, according to the World Health Organization (2019). The accumulation of events over time can lead to disruptions in daily life, religious practices, cultural norms, occupations, terrorism as a means to an end, etc. (Rozanov et al., 2019; Scheid & Wright, 2017; Segal et al., 2018).

One of the most serious global mental health issues is university students. Young people, who make up the majority of university entrants, are vulnerable to mental illness (Auerbach et al., 2018; Othman et al., 2019). According to Othman et al. (2019), most mental illnesses begin in this age group. This is also a time of transition for university students as

they become more independent and responsible. Similarly, Mofatteh (2021) clarifies that most university students leave their home country, which can lead to anxiety, despair, and stress. Nevertheless, (Ballad et al., 2022) emphasize that studying requires more effort, academic commitments, and tasks, all of which require self-directed learning and time management. This stress can be intellectual, social, or environmental. The pressure should drive students to meet academic standards. When the demands exceed their ability to cope, tensions arise.

According to a recent report, isolated or confined people suffer from high levels of anxiety, anger, confusion, and tension (Henssler et al., 2021). The highly contagious and deadly nature of COVID -19 can affect the mental health of people around the world, from sick patients and medical staff to family members, adolescents, and students (Dalal et al., 2020). Khademi et al. (2021) confirm that the pandemic has caused great worry and anxiety, especially among the elderly, due to their weak immune systems and ongoing underlying illnesses. Due to the immediate impact of the disease, psychological difficulties can sometimes go unnoticed, especially during a pandemic. However, studying the negative psychological impact of long-term crises such as the pandemic COVID -19 is crucial to support immediate and long-term recovery (Halberg et al., 2021).

Following Rahman et al. (2021), mental health problems can negatively affect health outcomes, cause early mortality, violate human rights and harm national and global economies. As reported by the World Health Organization (2019) mental health is a priority of the 13th General Programmed of Work (GPW13), which runs from 2019 to 2023 under the leadership of the Director-General WHO. The provision of mental health and well-being services empowers communities and individuals to reach their highest potential, which is only possible if their rights are respected and their mental

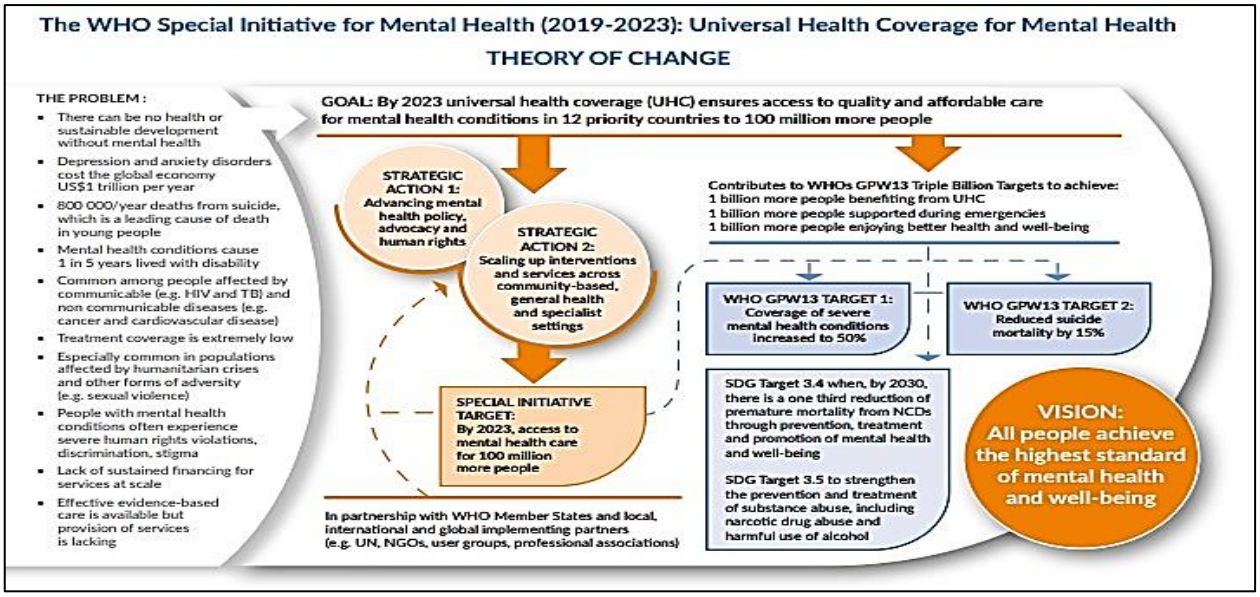


Figure 1.1
The WHO Special Initiative for Mental Health (2019-2023)
Source: World Health Organization (2019)

1.5 Depression, Anxiety, Stress, and Vulnerable Populations

Vulnerable populations are individuals and communities facing major hurdles related to psychological, financial, regulatory and environmental problems, as well as limitations due to illness or disability (Giorgi et al., 2020). Mental health problems and mental illness are common in disadvantaged communities (Jorm et al., 2017). Furthermore, Mourady et al. (2017) explain that mental health problems and lack of physical activity are more common among pregnant women, cancer patients, prisoners and drug users. In some cases, not enough attention provided to these groups.

According to the World Health Organization (2019), 10–16% of women are at risk of mental illness during pregnancy and 13–20% of women after childbirth. During pregnancy, pregnant women are more likely to suffer from mental health problems such as anxiety, stress, or bipolar disorder. If severe enough, these problems can significantly affect the outcome of a pregnancy. According to Salehi et al. (2020), it is possible for pregnant women to suffer from mental health problems such as anxiety, stress, or bipolar disorder due to a lack of social support, anxiety, or depression. Campolong et al. (2018) also found that pregnant women could improve their mental health by being more physically active. The effects of exercise on prenatal depression and anxiety have also been demonstrated.

A study by İzci et al. (2018) found that cancer patients with psychiatric problems make up about 33% of all patients. Major depressive disorder is thought to be three times more common in cancer patients than

in the general population. Because of their cancer diagnosis, cancer patients may develop depressive symptoms. Despite this disturbing news, Geetha (2017) clarify that life can seem bleak or patients can be gripped by despair. For this reason, it is particularly important that their psychological needs be met. Accordingly Lesser and Nienhuis (2020) emphasize that leisure-time physical activity has been shown to improve well-being, mental health and overall outlook on life.

It is also believed that prison inmates are more likely to suffer from mental health problems due to their incarceration (Haney, 2017). A study by Hutchison (2017) found that 64% of prison inmates, 54% of state prisoners and 45% of federal prisoners suffer from mental health problems. In addition, Kerekes et al. (2019) found that organized exercise lowers rates of sadness, anxiety and aggression among prison inmates.

Numerous national studies have found that more than half of people who abuse drugs also suffer from a mental disorder at some point in their lives, and vice versa (Wittchen et al., 2022). Substance abuse is often associated with anxiety, depression, bipolar disorder and borderline personality disorder. Such overlaps are disturbing. Depression, anxiety, stress and even cravings can be relieved with physical and mental/physical remedies (Connor et al., 2021).

1.6 Depression, Anxiety and Stress among Healthcare Professionals

A variety of studies examining depression, anxiety and stress in health care workers. Several of these ongoing studies involve nurses (Alnazly et al., 2021). According to Dey et al. (2021), the main causes of depression, anxiety and stress among healthcare workers are daily workload, work rhythm and its scheduling, and the work environment. Kakemam et al. (2019) found high levels of stress among nurses in a study on the prevalence and causes of stress. In addition to poor interpersonal interactions, poorly defined work tasks, work obligations and lack of control, the study found that workplace stress is primarily caused by poor interpersonal interactions at work.

There is no doubt that health workers were stretched to their limits at the beginning of the epidemic. In crowded hospitals, physicians and nurses have to work long hours to care for patients infected with the unusual and unexpected COVID -19 disease. The situation is likely to be very stressful and straining for those treating the patients, both psychologically and physically (N. Khan & Naushad, 2020).

In a survey of more than 500 health professionals and first responders conducted by Hendrickson et al. (2022) and published in the Journal of General Internal Medicine, the vast majority of respondents reported significant clinical psychotic problems, including anxiety (75%), suicidal ideation or self-harm (15%), and post-traumatic stress disorder

(38%). Many health professionals participated in mental health support groups during the epidemic. As the epidemic goes up and down, the three organizations listed below continue to affect the lives of physicians, nurses and other staff responsible for health care in the community.

In a 2022 Medscape study by Bailey et al. (2022), the most common responses from physicians when asked why they did not seek treatment for depression or fatigue were:

1. I do not need professional help for this (49%).
2. I do not want to take the risk of telling the medical association (43%)
3. Worried it might show up in my insurance history (32%)
4. Worried that my colleagues might find out (22%)

The majority of physicians believe that they are capable of managing emotional distress themselves. There is also a great concern that employers or a medical association might find out about it. There is still a stigma attached to mental health in society and several physicians have suffered major professional setbacks when their mental health problems were discovered.

According to Karakose and Malkoc (2021), many aspects of medicine are negatively affected by stress, depression and anxiety, which is felt by physicians: lack of sleep, low performance, psychiatric disorders and low self-confidence are some of the problems faced by insomniacs. Van Der Feltz-Cornelis et al. (2020) noted that both the doctor and the patient could feel the effects of this. Some of these negative consequences include absenteeism (Balasubramanian et al., 2020), dissatisfaction, poor performance outcomes (Saquib et al., 2019), prescribing errors (Scott, 2018), a high number of patient complaints (Sundler et al., 2022), drug and alcohol abuse and suicide (Urquiza, 2018).

1.7 Mental Health Support Programs for Healthcare

A support system is defined as a network of people who can provide practical or emotional help. Through these support networks, stress and anxiety can be reduced, helping to improve overall health (Pollock et al., 2020). Mental health and well-being support (MHPSS) refers to interventions to protect or improve a person's mental health and well-being (Satinsky et al., 2019). Post-traumatic stress disorder (PTSD) plays an important role in the treatment and prevention of mental health conditions such as depression and anxiety (S. Wang et al., 2020). According to Schellekens et al. (2020), a stable support system can bring numerous benefits. It can help patients live healthier, longer and feel better. Stress, depression and anxiety can also be alleviated by a support system.

The number of people suffering from mental illness worldwide is estimated to be 450 million according to Abdullah and Choudhury (2018). There has long been a misunderstood relationship between mental health and mental illness. The issue of mental health has long been misunderstood. According to the World Health Organization (2019), definition, health is "a state of complete physical, mental and social well-being and not merely freedom from disease". Mental health according to Philippe and Houle (2020) encompasses a wide range of activities that directly or indirectly related to mental well-being. In addition to promoting well-being, it treats and rehabilitates people with mental disorders and prevents mental illnesses (Jain et al., 2021).

According to the World Health Organization (2019), Jordan has been identified as a country in need of support to develop its mental health system. WHO has selected the country as the first of six countries worldwide to adopt the Mental Health Action Programme (mhGAP)? Based on evidence and best practice, WHO entered into a collaboration with the Jordanian Ministry of Health and the Jordanian Nursing Council in 2008. A national steering group composed of various stakeholders developed the first national mental health strategy and action plan. The focus in organizing mental health services has shifted from hospital care to community-based programs. The bio-psycho-social model of health is applied, which involves a multidisciplinary approach between different members of the health team to consider the biological, psychological and social impact on human functioning (Keynejad et al., 2018).

An essential part of the implementation of the mhGAP is the integration of mental health into primary care. Psychological, neurobiological and substance abuse disorders are treated more effectively under the programmed, while depressive episodes, schizophrenia, seizure disorders and other serious mental illnesses are treated alternatively in health centers to meet the needs of the general population, including in remote areas. In line with the mhGAP implementation plan, health care providers were trained and monitored in Amman, Zarqa and Irbid. A second level of care was established in three outpatient mental health facilities in the same locations to ensure accessibility, availability and appropriate treatment. A number of university institutions and the Ministry of Health have also developed models for emergency care rather than focusing only on mental health facilities (Hijiawi et al., 2019).

1.8 History of Mental Health in Jordan

In Jordan, there are a number of actors providing mental health services and activities, although none of them is solely responsible for policy-making or funding. Military, governmental, private and non-governmental organizations providing mental health services provide both

inpatient and outpatient services at different levels, each with its own funding and service structure (Kemp et al., 2022). There are few resources in the Jordanian mental health system that address the recovery from biopsychosocial disorders. According to Naser et al. (2020) the Jordanian mental health system is characterized by a high number of mental health and psychosocial care professionals, and by the fact that the vast majority of mental health services are provided in tertiary facilities, Also have a primary, community-based or self-care facilities. Commitment to mental health has recently increased in Jordan. Jordan, one of the six countries selected in 2010, has also adopted the mhGAP (Alattar & de Leon., 2019).

According to Naser et al. (2020), a new mental health strategy and policy was introduced in 2011. This new policy emphasizes the importance of providing excellent mental health services that incorporate a bio-psycho-social approach through multidisciplinary interventions, as well as a strong focus on human rights, participatory approaches and cultural relevance. Furthermore, the World Health Organization (2020) reports that in addition to the establishment of a Mental Health Authority, which makes policy decisions within the Ministry of Health and has a budget, there is also a need to establish programs to expand mental health centres. In addition, the program has increased the number and capacity of mental health professionals, promoted the human rights of mental health service users, reduced stigma and supported mental health advocacy.

The World Health Organization (2020), the Jordanian Ministry of Health and WHO have been working together since 2008 to improve and modernize Jordan's mental health system. This partnership has improved the availability and accessibility of effective therapies in primary, secondary and tertiary care. The Sustainable Development Goals (SDGs) and the National Mental Health and Substance Use Action Plan (2018-2021) have been linked. In addition, WHO has launched the Director-General's Mental Health Initiative (2019-2023), which aims to make mental health treatment more affordable and accessible for 100 million people. And World Health Organisation Mental Health and Drug Control Action Plan 2018-2021, Mental Health Initiative and its Divisions for 2019-2023. Many current organisations, such as IMC and EMPHNET, are interested in undertaking initiatives and research to support mental health services and their integration into primary care and student mental health services. Twelve countries are involved in this program, including Jordan. Due to the impact of COVID -19 on community wellbeing, funders were also interested in supporting mental health in Jordan. As a result, WHO will continue to work with national partners to identify priorities. These include the reorganization of the Mental Health and Disability Directorate of the Ministry of Health, the promotion of mental health and human rights, and

the expansion of quality treatment and services, particularly in primary care.

1.9 Influence of Intervention and Mental Health Support Programs for Healthcare Professionals

As outlined in the “Luxembourg Declaration”, workplace health promotion (WHP) can be achieved by improving the organizational and working environment, promoting active engagement and supporting personal development, according to, Hassard et al. (2018). As the “European Agency for Safety and Health at Work (EU-OSHA)” points out, the success of any workplace program depends on safe and healthy working conditions. A healthy workplace culture requires first and foremost a functioning risk management system (Rojatz et al., 2017). To promote positive mental health, it is necessary to strengthen the factors that have been shown to promote such health (Barry et al., 2019). According to Anagnostopoulos et al. (2015), the “European Pact for Mental Health and Well-being” recommends the implementation of “mental health and well-being programs in conjunction with risk assessment and prevention programs” in situations that may have a negative impact on workers' mental health (stressful work environment, abusive behaviour such as violence or harassment at work, substance abuse). These therapies must take into account the organizational context of the problem in addition to the individual (person-oriented) and organizational (work-oriented) dimensions. There needs to be open talk about mental health problems in the workplace if we are to create a welcoming and supportive environment for employees. Various public health interventions have been shown to reduce psychosocial risk factors and improve mental health. This will be discussed in more detail in the next sections.

Work-directed interventions: An important component of work-based interventions is changing the work environment and workplace organization (tasks or work procedures). Changing the physical and environmental elements of an organization is the goal of interventions at the organizational level (Anagnostopoulos et al., 2015).

Person-directed interventions: Person-cantered treatments or interventions that focus on individuals seek to provide personal skills, procedures or cures to reduce the impact of stress at the individual level. Interventions that use, for example, relaxation or cognitive behavioural strategies to improve coping skills without changing the work environment or activities (Anagnostopoulos et al., 2015).

In discussing interventions in mental health support programmers, 'inter professional collaboration' was listed based on the work of Butler and Peek (Bosch & Mansell, 2015), including coordinated care, co-located care, and integrated care:

Coordinated care: requires a shared care plan or clinical culture that refers to frequent exchange of information between practitioners in different medical and mental health settings, triggered by referrals. In this plan, primary and specialty care physicians maintain multiple practices.

Co-located care: This means that behavioural health and medical practitioners work together in the same location, interact frequently, usually use different systems, but have certain care plans and a common clinic culture. Primary and specialized providers still have different governance structures in this approach.

Integrated care: means sharing spaces and systems, constant communication and a common culture and routine instead of separate care plans. The offices and administrative spaces of the providers in this model are shared.

It appears that coordinated care and shared accommodation improve depression symptoms and treatment adherence more cost-efficiently and effectively than standard care.

1.10 Issue Description

Apart from being affected by the same causes that cause stress in the general population, physicians are also subject to stress because of the nature of their employment and societal expectations in general. Physicians are particularly vulnerable to mental health problems due to the demanding nature of their work, which can cause or exacerbate anxiety and despair. According to studies, (Al-Amer et al., 2022) stress, anxiety and depression are common among physicians. Much work has been done to study the psychological or mental status of physicians in rich countries such as the United States and Canada, while low- and middle-income countries lag significantly behind. In Asia, especially in Jordan, there are few studies on the prevalence of stress, depression and anxiety. Despite numerous studies on stress among Jordanian physicians and health professionals in general, there have been few studies on the prevalence of stress, anxiety and depression among Jordanian emergency physicians.

Every day, first-year emergency physicians face an enormous workload. There are not enough physicians for a huge number of patients. Moreover, during restless nights and when dealing with the relatives of deceased patients, there are often no therapy sessions for physicians. Most emergency physicians are agitated and worried, and some seek resignation. Based on the above, it is very possible that the majority of emergency physicians in Jordanian health facilities face similar problems. Against this background, the aim of this study was to determine the prevalence of stress, anxiety and depression among emergency physicians at Al Bashir Hospital in order to find solutions.

1.11 Study Objectives

1.11.1 General Objective

To determine the prevalence of depression, anxiety and stress symptoms among emergency physicians at Al- Bashir hospital.

1.11.2 Specific Objectives

1. To assess the prevalence of depression, anxiety and stress symptoms among emergency physicians at Al- Bashir hospital.
2. To investigate the main risk factors contributing to mental health problems by the DASS-21 with respect to clinical depression, anxiety, and stress among emergency physicians at Al- Bashir hospital

1.12 Medical Definitions

Stress: is often described as any change or disruption in an individual's internal/external environment that disrupts homeostasis (Cumpstey et al., 2021) and is typically caused by intrinsic or extrinsic adverse influences (stressors) (Zangeneh, 2017). It can also be characterized as feelings of overwhelm, apprehension and anxiety, and can be abrupt (short-term) or chronic (ongoing) (Hamblin, 2018).

Anxiety: Anxiety can be a normal, adaptive and meaningful response in stressful situations, with the feeling of anxiety usually dissipating once the unpleasant event or 'stressor' has passed (Lechner et al., 2020). If the reaction is prolonged or severe, this disproportionate amount of worry can become disruptive and interfere with a person's ability to cope with events (Janis, 2016), and can therefore be classified as inappropriate and excessive occurrence of anxiety. Anxiety disorders are characterized by a chronic state of heightened anxiety that can interfere with daily living, motor tension, sympathetic reactivity and heightened alertness (Staner, 2022).

Depression: Depression is an emotional illness characterized by bad feelings, low self-esteem, guilt, sleep disturbances, cognitive dysfunction and suicidal thoughts (Hamblin, 2018). Popular theories suggest that depression has a physiological cause, although this is not fully understood. A decrease in monoamine levels is a key factor in depression (a hormone involved in mood regulation), specifically dopamine, norepinephrine and serotonin (Gu et al., 2018).

1.13 Significance for the Study

Recent studies have looked at the physical and mental health of physicians. Many physicians are stressed due to a variety of factors, including work overload, dissatisfaction with their job, and financial worries. There are a number of factors that affect the mental and physical well-being of physicians. Especially for emergency physicians, whose profession involves saving lives, symptoms of stress, anxiety, and

depression need to be carefully monitored. A doctor who feels stressed, anxious or depressed may develop physical and mental problems, perform poorly in their job, and have a negative attitude towards other hospital staff and patients. As a result, medical errors, work-related stress, dropping out of postgraduate medical studies, personal problems, and suicide occur.

Based on this study, emergency physicians can gain a better understanding of stress, anxiety and depression based on evidence-based data. It also provides information on issues affecting emergency physicians in Jordan, including those related to their psychological or mental health. Stress, anxiety and depression can become a burden on medical facilities and the country as a whole, leading to low productivity and poor work performance. Based on the data obtained from this study, strategies to manage stress, anxiety and depression among physicians will be developed. In addition, this study would provide a basis for future studies on stress, anxiety and depression among Jordanian emergency physicians and contribute to the development of appropriate health and safety policies. It also provides information for further research in many areas and contributes to the development of appropriate health and safety systems (especially for the mental health of the work cadre).

1.14 Explanation of the variables

In this study, depression, anxiety, and stress were the outcome variables. These outcome factors were measured using the DASS-21. Each outcome factor was defined as a case if it scored higher than "normal". Each of the three outcome variables was then analysed using a case-control design. The independent variables were selected based on previous research and plausibility. The important variables of this study are defined below.

1. Stress is described as a mental state that occurs when job expectations do not match or exceed a worker's talents, resourcefulness, or aspirations (Hasan et al., 2018).
2. Anxiety is a fearful feeling characterized by symptoms such as trembling, restlessness, and stress (Khar et al., 2022).
3. Depression is a psychiatric condition characterized by persistent melancholy and a loss of interest in typically enjoyable activities (G. J. A. o. D. Perrotta & Anxiety, 2019).

1.15 The Research Plan

This study is divided into five parts so that the reader can understand how the objectives of the study can be achieved in a simple and transparent way. In the first chapter, the researcher explains the subject of the study, mental health support programs, the purpose, objectives and significance of the study. The second chapter deals with EMS and depression, anxiety and

stress among physicians in emergency departments. The third chapter deals with research technique and design variables such as research strategy, data collection and other variables. The results and analysis are presented in Chapter Four. The findings, conclusions, limitations, suggestions and future research directions are summarized in Chapter Five.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

Emergency care workers regularly face stress, depression, and anxiety in an unpredictable, fast-paced profession where they deal with the trauma and concerns of sick and injured people (Alnazly et al., 2021. The opportunity to provide emergency care outside of a regulated clinical setting can be very appealing to individuals considering a career in this field. EMS is a medical service and a public safety agency with distinct obligations and significant issues (Sundler et al., 2022). The mental well-being and mental health of professionals are two issues that need to be recognized, supported and destigmatized (Satinsky et al., 2019). The main objective of this chapter is to identify the prevalence of depression, anxiety, and stress symptoms among emergency physicians. The current EMS literature is reviewed in this chapter. This chapter looks at the theory of stress, coping, and adaptation. The main risk factors contributing to mental health problems are explained in detail in this chapter.

2.2 Emergency Medical Services

Today's concept of EMS has evolved from its original voluntary roots to a multidisciplinary organization encompassing both public and health services (Thor, 2019). According to Williams et al. (2021), EMS is unusual in the health sector because it provides unplanned, acute care in non-clinical settings, such as fire and police services. In addition, Nelson et al. (2020) report that EMS is the first point of contact, which means that clinicians typically know little about the circumstances they are responding to and have to make rash decisions that can have a significant impact on the patient's condition. Kapalo et al. (2020) also point out that clinicians in an ambulance often work in teams of two, which can be any combination of physicians, electronic medical records (EMRs), emergency medical technicians (EMTs) and/or paramedics, and that the patient's condition determines which member of the staff acts as the caregiver. A study by Bird et al. (2020) in health expectations shows that care is usually assigned to a staff member with more experience because the patient's condition can change, resulting in an unbalanced workload for the partners. Workflows are fast-paced as teams of EMS respond to a large number of patients with different problems over the course of a shift. However, they often have to wait next to patients in hospital emergency rooms for long periods. There is little time or opportunity to interact with colleagues between assignments. Work is divided into 12-hour days and night shifts. All these variables contribute to an emotionally and physically demanding job and work environment.

EMS provide vital and life-saving assistance to victims of medical and trauma emergencies around the clock. Because of these developments, EMS is now an important part of healthcare systems worldwide (C. M. Smith et al., 2017). For example, the US government now recognizes the two levels EMS, Basic and Paramedic, as nationally recognized qualifications. Pre-hospital treatments offered by EMT-Basics include cardiopulmonary resuscitation, basic airway management, cervical immobilization and bandaging. Paramedics not only have advanced training in emergency medicine, but also advanced training in placing intravenous infusions, administering medications and advanced cardiopulmonary support (Fang et al., 2020).

2.2.1 EMS History

Schein et al. (2016), in a study of emergencies in abdominal surgery, reviewed the literature and found evidence that the first casualties at Johns Hopkins Hospital were treated free of charge in the first "casualty room" with two beds. A police patrol car was used to transport patients as ambulances were not readily available. According to Hsu et al. (2005), Hopkins physicians were instrumental in developing the field of emergency medicine. In the 1950s, Hopkins developed the Emergency Squad Doctor Plan, which allowed doctors on call to provide immediate treatment at accident scenes. It was in this spirit of innovation, service and quality that the Department of Emergency Medicine was founded.

Alhazmi et al. (2020) point out that most EMS organizations can be categorized based on their process design, geographic reach and/or the demographic characteristics of the region they serve. According to urban and suburban areas have larger client and patient populations, are often self-contained and have their own emergency departments with advanced services (e.g., Cath labs, trauma centres, etc.). Because of their larger, more spread-out service areas and dispersed higher level of care resources, suburban delivery methods logically face conflicting constraints. For example, a large oil refinery or chemical plant requires very specific rescue or treatment resources when emergencies occur. Industrial delivery systems operate in their own unique environment and therefore provide emergency services in locations with unusual risks.

In addition, Brambilla et al. (2022) report that Western EMS organizations share an 'Anglo-American' ethos that emphasizes rapid patient transport rather than protracted on-site stabilization and uses specialists rather than emergency physicians. The Franco-German approach focuses on on-site care and counselling and, conversely, deploys doctors on the ground.

In Jordan, the Civil Defence Directorate (CDD) is responsible for pre-hospital emergency care. The CDD provides ambulances with qualified medical staff to provide first aid on the spot and transport patients to the hospital. CDD departments send most ambulances, but some are sent directly by hospitals and general clinics. “The Jordanian Air Force” provides helicopters piloted by military doctors for aerial medical evacuations. Paramedics go through a 2-year “standardized national training program” that is essentially identical to paramedic training in the United States (Wang, 2018).

2.2.2 EMS Structures and Dispatch

Medical emergencies are usually caused by a rapid attack on the body or psyche, such as injury, illness, birth difficulties or a chemical imbalance; but they can also be caused by prolonged carelessness (Falvo & Holland, 2017). According to Mohamadi and Yaghoubi (2017), treatment of these conditions EMS involves prompt assessment, timely provision of relevant therapies and rapid transfer to the nearest appropriate health facility using the best possible methods to improve survival, reduce morbidity and prevent disability. The aim of an efficient EMS is to provide emergency medical treatment to all who need It (Sariyer et al., 2017). However, Wooldridge et al. (2020) clarify that recent advances in medical treatment and technology have expanded the scope of what was once the conventional realm of emergency care. Prehospital care and transport are now part of these services, which are no longer limited to actual treatment in hospital from arrival to stabilization.

A Study by Hick et al. (2020) n health care, crisis standards of care, proves that emergency treatment can be wasteful if provided in a crisis scenario with poor planning and inefficient use of resources. In many countries, minimal resources are allocated to potential crises, and when such events occur, a hasty and costly use of resources is required. Similarly, Ghazali et al. (2018) emphasized that efforts to improve emergency preparedness, on the other hand, do not always lead to increased spending. Adjustments in the organization and planning of emergency care can be made at modest cost and lead to much more efficient use of resources, excellent health care and good outcomes. According to National library of Medicine (2020), EMS is being built to improve emergency medical care outside hospitals and promote social stability and development. Traditionally, this has been seen as part of national social security and welfare policy, in line with global health and security requirements.

Kim et al. (2021) an examination of data from the Korean National Emergency Department Information System, Kim reported that the improvement of people's lives and awareness, as well as the experience of

major accidents and disasters, have led to the establishment and further development of EMS in Korea as well as in other developed countries. While it may be true that emergency medical services system (EMSS) is based on similar ideas and goals, each country has its own EMSS due to social, medical and environmental differences. This makes it difficult to determine which EMSS is superior from country to country or type to type. The effort invested in improving and growing an EMS is more important. In other words, the National Emergency Medical Centre in Seoul, Korea report that the EMSS reorganizes people, facilities and equipment in areas so that they can be run organically to deliver EMS effectively and efficiently. It is, therefore, crucial that 119 paramedic and hospital teams EMS develop an organic, cooperative system that enables them to safely and quickly transport emergency patients to appropriate hospitals for treatment, after practicing appropriate treatment at the scene and providing the most efficient EMS in a short time. The operational phases of the EMS are shown in Figure 2.1.

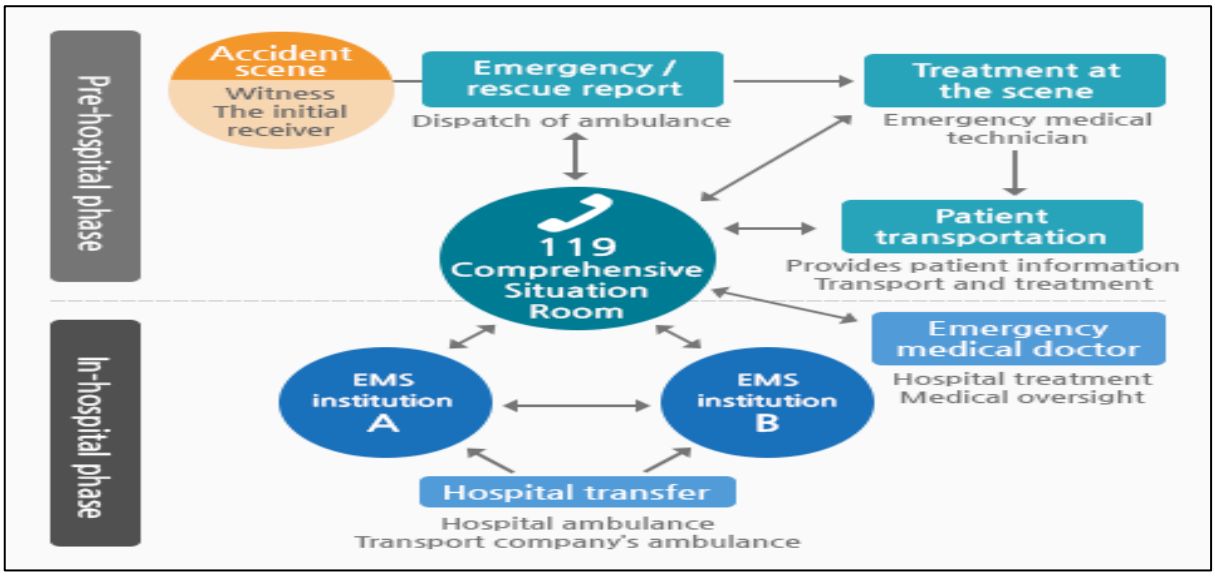


Figure 2.1
The Trend of Korean EMSS
Source: National Emergency Medical Centre, (100-799) 245, Seoul, Korea

2.3.3 Phases of EMS operations

In the last 20 years, the care of severely injured patients before hospitalisation and during initial hospital care has changed drastically. The time factor has become increasingly important in this context. Today, trauma patients are stabilised at the scene of the accident and quickly transported to hospitals, whereas in the early 1990s, complete and thorough care was still provided at the scene of the accident. In addition, both pre-hospital trauma rooms and emergency trauma rooms provide a better quality of care to severely injured trauma patients by implementing training

and teaching programmes such as pre-hospital life support for trauma patients and Advance Trauma Life Support (Oving et al., 2020).

There are two phases of EMS: pre-hospital and inpatient. The specifications are as follows:

Pre-hospital phase

1. Notification of accidents and dispatch of ambulances
2. 119 operator (dispatcher) directs emergency care until ambulance arrives on scene.
3. Emergency care on site by 119 (emergency paramedics, physicians).
4. The decision to which hospital to take the patients is made by exchanging information via a telecommunication link between an ambulance and a hospital. During the transport, the patients are treated.

In-hospital phase

1. Examination of treatment at the scene and ongoing emergency care.
2. Diagnosis requires appropriate investigations.
3. Decision between hospitalisation (intensive care or normal ward) and emergency surgery.
4. Decision whether to refer the patient to a specialised emergency centre (for casualties, burns, poisoning, cardiovascular centre, etc.) that has medical staff or the equipment and facilities required for the patient's emergency care. Deciding to which hospital the patient should be transported

2.2.4 EMSS Models

According to Mamo et al. (2022) A global EMSS can be divided into five different types. In this regard, there are five models that can be classified as Anglo-American, Franco-German, Dutch, Sarajevo and Japanese. It is generally accepted that emergency medical care is provided in prehospital settings in accordance with two well-known primary EMS models. These are the Franco-German model and the Anglo-American model. Since the 1970s, there has been a clear categorical division. Worldwide, EMS systems differ in composition depending on the model.

1. Anglo-American Model:

This concept focuses on Bring patient to emergency room (ER), doctors not controlling care in the prehospital period (Navarro Moya et al., 2020) Physicians, especially physicians, are primarily responsible for this. Therefore, emergency physicians need to monitor and evaluate medical advice both directly and indirectly. This model can be found in New Zealand, Australia, Costa Rica, Singapore, Hong Kong, Canada, Taiwan, the United Kingdom and the United States, among others.

2. Franco-German Model

With this concept of bringing ER to the patient, doctors provide prehospital care. A doctor is usually a member of the EMSS, but trained emergency physicians can sometimes provide care in the field under the supervision of a doctor. In South America, France and Spain, doctors also work as call operators (dispatchers) who connect 911 calls to the nearest EMS service. In the Franco-German model, there is no autonomous clinical and academic status for emergency medicine as in the Anglo-American model. Therefore, it is difficult to find suitable and high-quality personnel for the EMSS or the emergency medicine profession. Several countries in Europe and South America apply this paradigm (Navarro Moya et al., 2020).

3. Holland Model

In Holland's model, nurses are responsible for pre-hospital care. Nurse practitioners are similar to nurses in the United States. As long as physicians do not supervise them, they are allowed to provide all forms of care in the prehospital phase. There is general agreement that Dutch emergency medicine, unlike the Franco-German models, does not operate independently. Thailand also follows this approach (Shao et al., 2018).

4. Sarajevo Model

Following the Sarajevo model, regional emergency centres manage emergency services. They also provide EMS education, reporting, registration and counselling and care for various emergency patients in addition to their function as ambulance bases. This type is very popular in Eastern Europe and Asia (Mamo et al., 2022).

5. Japanese Model

In Japan, emergency departments are also built according to the concept of autonomous intensive care units instead of emergency rooms. Ambulances can only transport emergency patients who are in an extremely critical condition. Under this model, the emergency department has about 20-30 beds, an operating theatre, an intensive care unit, a cardiac examination room, etc. Under this model, patients can be classified according to standardised criteria that they can apply when they are transferred to this type of emergency room. There are more than 150 emergency centres in Japan. This type is also very popular in China and Russia (Makizako et al., 2021)

2.2.5 Emergency Medical Services Challenges

Despite recent progress in emergency services, this structure still faces many challenges. Some of these are the lack of and inefficient provision of emergency bases, non-standardized bases, burnout among ambulance drivers, inadequate standard operating procedure (SOP), inadequate medical routing system and lack of specialized fleets aviation,

rail and marine (Oblak, 2021). According to Shevchuk et al. (2021) this area of health care should receive special attention from governments around the world to contribute human and financial resources, develop offline processes, introduce medical prioritization, develop telemedicine, deploy helicopters, develop sinusoidal obstruction syndrome (SOS), provide education and increase private sector participation.

2.2.6 Future of Emergency Medical Services

Digital technologies can speed up and improve patient care. These technologies can also help emergency departments manage situations more effectively and safely. The widespread use of these technologies can provide critical care patients with the help that was previously unavailable (Sundaravadivel et al., 2017). In addition, Silver (2021) suggests that in the near future these new technologies may allow emergency services to focus more on patients and work more efficiently. For example, when working at night or in dark places, they can quickly turn on the visibility mode of their clothing, which is made of lightweight smart materials that protect the user from stings and gunshots. Wearables and sensors could potentially track one's health and fitness while providing location information. Similarly, Mills et al. (2018) highlight that first responders in autonomous ambulances could have time to collect patient data and prepare for the scenario on the way to the scene. This would allow them to provide the patient with the equipment they need. It would be much easier to collect patient data and monitor health status using a digital tattoo, sensor or wearable. In addition, patients could be lifted up without much effort with the help of exoskeletons.

2.3 Challenges of Working at Emergency Department

According to Bijani et al. (2021), clinical decision-making is an integral part of the professional duties of healthcare professionals and consists of analysing data, making judgements and acting on those decisions to achieve the intended goal. “The Health Emergency Committee” of the Chinese Research Hospital Association (2019), also reports that medical decision-making is one of the most important professional qualities of emergency service providers and can greatly enhance the effectiveness and quality of care. The work environment in prehospital emergency care is unpredictable and complex. Accordantly, Bijani et al. (2021) noted that EMS staff sometimes have to help patients who are in a severe and unstable situation and whose lives are in danger. Andersson et al. (2019) mention that EMS staff need to be able to make quick decisions to respond appropriately to rapid changes in a patient's health; they need to know how to quickly assess a patient's condition, priorities medical needs and take the right action. If EMS professionals are

not able to make effective decisions, they will not be able to make sound clinical judgements and take appropriate action that may worsen a patient's health condition or, in certain situations, lead to permanent harm or death.

2.4 Depression, Anxiety and Stress among Physicians Working at Emergency Departments

Health care is available to all residents of a country 24 hours a day, seven days a week. Physicians are the largest working group in most health services and play a crucial role in the performance of the system (Herzberg et al., 2022). According to Shanafelt et al. (2020) medical care is a demanding profession. Caring for clients, people, families, organizations, communities and entire populations struggling with multiple, complicated and traumatic problems can be daunting even for the most experienced professionals. Therefore, Yufenyuy Claris (2018) noted that physicians and nurses are often confronted with emotionally charged scenarios, strong interpersonal and interprofessional conflicts and disagreements at work while trying to make correct and safe judgements.

Employers are increasingly concerned about the mental well-being of their employees. However, they are aware of the problem of work-related stress among health professionals and the significant, specific dangers it poses to health professionals. It affects satisfaction, mental well-being and overall health (Guest, 2017). Quelch and Knoop (2018) found in a recent MetLife disability claims survey that 7% of all short-term disability benefits are due to mental health problems, with this figure almost doubling for white-collar workers. Fifty-five per cent of complaints were related to depression and the remaining thirty per cent to anxiety and stress.

A study by Said and El-Shafei (2021) found that employment in the medical field increased the risk of both mild and severe mental illness, with occupational stress playing a role. Another study by Boolani et al. (2021) discloses that mild mental comorbidities include stress, anger, anxiety, sadness, mental exhaustion and sleep disorders; they are classified into different categories such as exhaustion, adjustment disorders and subthreshold depression. Although Fekadu et al. (2017) emphasizes that mental health problems such as major depression, psychotic disorders and anxiety disorders are less common, workplace stress can cause or exacerbate them. More importantly, Ullmann et al. (2019) found that a wide range of stress types are associated with psychiatric disorders. This fall into two categories: the general allostatic stress of the task and the structure of the workplace, which includes the schedule and work demands such as the emotional stress of treating patients. Nevertheless, Barattucci et al. (2019) discovered that the number of overtime hours and total time

spent by workers in the automotive industry were related to mood changes, including melancholy and stress.

One of the most demanding professions in the emergency department is nursing. The nursing profession is physically and mentally demanding for nurses (Dekeseredy et al., 2019). Nurses face professional work demands from supervisors, managers and medical administrative staff (Adriaenssens et al., 2017). In addition to relationships with colleagues, subordinates, other staff, physicians and other departments, Miljeteig et al. (2021) found that these were also predictors of psychological distress related to the conflict between the instrumental and goal-oriented demands of 'making the patient well' and the demands related to emotional support and alleviating patient stress. Other nurses and patients' families were also sources of abuse.

Working conditions such as shift and weekend work, inadequate pay, conflict, prejudice and workplace hazards may play an important role in these problems (Nena et al., 2018). In McCloughen and Foster (2018), the practice of medicine consists of constantly changing experiences and situations that can evoke a wide range of moods and emotions. Moreover, Kinman and Teoh (2018) said that physicians in health care have to deal with life and death, disputes with partners and duties, poor professional training and lack of support in the workplace. Physicians also have to deal with moral and ethical dilemmas, rapid technological changes and legal difficulties (Nittari et al., 2020). Health care reform has affected the treatment of physicians through increasing workloads, staff reductions, high patient volumes and professional instability, as well as unclear roles, responsibilities, expectations and obligations (Tahan, 2020). In contrast, people who are vulnerable to depression include those with high reward dependency, those who prefer to help others, and those who are empathetic and sensitive to interpersonal cues. Physicians possess these qualities (Wong, 2020).

Insecure employment expectations, job instability and lack of learning and development opportunities negatively impact the health of the medical workforce (Russo & Terraneo, 2020). As Kyron et al. (2019) noted, death, divorce and changing work conditions are difficult events for everyone. According to Banerjee et al. (2021) study, physicians not only have the opportunity to experience these events personally, but also experience them vicariously through their patients on a regular basis. Stress can be caused by juggling the demands of work, marriage and children. When the pressure is high, prolonged stress can lead to depression, anxiety and hypertension, resulting in long-term mental and physical illness (Adriaenssens et al., 2017). As described by Khatatbeh et al. (2021) providing the highest level of care to clients in healthcare facilities increases the pressure on physicians rather than the societal burden, causing

physicians to suffer from a variety of stressful situations. If these effects are not recognized, they surface in their life problems, complicating and prolonging a lifetime of suffering. In Jordanian society, according to Ghareeb et al. (2021), physicians, like the rest of the population, suffer from a variety of psychological problems. They are victims of inadequate security, difficult conditions and neglect of their professional duties in health facilities. Compared to other professions, this means a limitation of their rights and additional difficulties in their lives.

2.5 Depression, Anxiety and Stress amongst Healthcare Professionals in Jordan

The stress experienced by healthcare workers in Jordan has been investigated in several studies (Kemp et al., 2022). Some of these studies address stress among nurses. According to Chemali et al. (2019) the main sources of stress among healthcare workers include daily workload, work rhythm and its scheduling, and the work environment. In the study on the prevalence and causes of stress. Al-Amer et al. (2022) found high levels of stress among nurses. The survey also found that the main causes of stress at work included poor interpersonal interactions, poorly defined tasks, work obligations and lack of control.

Alhalaiqa et al. (2021) conducted a survey to investigate the psychological difficulties (stress, sadness and anxiety) and levels of perseverance among healthcare professionals caring for patients with coronavirus disease in 2019. (COVID -19). Results showed that 225 health professionals experienced varying levels of stress, with the majority experiencing high levels of distress (46.2% experiencing lower levels and 53.8% experiencing high levels); about half of them (52.9%; n = 119) reported high levels of anxiety and well over half reported high levels of depression. Higher levels of anxiety and sadness were also associated with lower resilience and increased stress.

Al-Amer et al. (2022) studied anxiety, depression and stress among Jordanian nurses and examined the factors that determine these states. The study found that depression, anxiety and stress were prevalent among nurses (57.38, 42.4 and 50.1%, respectively). Psychological symptoms were more pronounced in those who dealt with patients with coronavirus disease.

Maswadi et al. (2019) examined perceived stress among residents in Jordanian hospitals and associated risk factors. Increasing workload and sleep deprivation, as well as dissatisfaction with staff, money and programmed were associated with stress. In multivariate analysis, the following characteristics were significantly correlated with stress: female gender, dissatisfaction with work environment, and coping with stress at work, school and family.

2.6 Depression, Anxiety and Stress among Physicians in Emergency Department at Al-Bashir Hospital.

Many physicians suffer from depression and anxiety symptoms, especially those who work in emergency departments where they work long hours, night shifts and are under constant pressure (Abdalkader & Hayajneh, 2008). Regardless of the pressures they face and the health risks they face, physicians may not be aware of the factors that can affect their mental health (Upadhaya et al., 2020). According to Alhalaiqa et al. (2021), it is important to recognize the signs of anxiety and depression to ensure appropriate treatment. Many environmental and psychological factors contribute to burnout and depression among physicians, including social isolation, high mental and physical demands, and job dissatisfaction.

Several Jordanian studies have shown that poor care is related to physician discomfort and that residents commit more medical errors (Abdel-Qader et al., 2021). The prevalence of depression and anxiety symptoms, on the other hand, varies depending on the study, with some claiming that more than half of all participating physicians are depressed. Depending on the number of years of training, medical specialty and demographic characteristics, studies come to different conclusions (Basheti et al., 2021). Although numerous studies have focused on depression and anxiety symptoms among physicians and have demonstrated a significant association, questions remain about the health risks for depression and anxiety among physicians, particularly in conflict situations where specialists are more vulnerable to mental illness (Khader, 2021).

During the epidemic COVID -19, Algunmeeyn et al. (2020) conducted a study on the variables affecting the exhaustion of health care providers. The study discovered three important variables contributing to health provider burnout in the selected hospitals: work stress, inadequate staffing and resources, concern for COVID -19 diseases and interprofessional partnerships in health practice. The study also provides suggestions for reducing and preventing burnout among healthcare workers in Jordanian hospitals.

In line with Boran et al. (2011) research, 27% of 402 healthcare workers in North Jordan were stressed. General practitioners (33%), dentists (30%) and pharmacists (25%) were the most stressed. Specialists were the least stressed (12%). Women, long working hours and being a general practitioner were associated with the most stress. Unruly patients and a high workload were also a problem. There is a strong association between high stress levels and irritability (58%), consumption of stimulant drinks (56%), difficulty concentrating (51%), headaches (63%), chronic back pain (48%) and colds (47%).

There is insufficient data on the prevalence of stress, depression and anxiety among physicians or across the public emergency department at Al-Bashir Hospital. Furthermore, estimating the prevalence of anxiety, stress and depression among emergency department physicians is critical to assist health authorities in identifying variables that lead to stress among physicians and to promote remedial interventions among this vulnerable population. The aim of this study was therefore to investigate the prevalence of stress, anxiety and depression among physicians in the emergency department of Al-Bashir Hospital.

2.7 COVID-19 Pandemic

The World Health Organization (2019) has a global outbreak of COVID 19. In March 2022. As a public health problem, anxiety, depression, stress among physicians was classified as an epidemic even before the pandemic. It is characterized by physical and mental exhaustion, depersonalization and low self-esteem caused by prolonged, chronic work-related stress (Amin et al., 2020). According to Harvey et al. (2021) Burnt-out physicians are more likely to suffer from medical disorders, mental disorders, substance abuse, suicidal thoughts, and accidents, among others. There is also a link between physician burnout and patient harm. This could lead to fewer medical errors and lower quality of care. The shortage of physicians and inequality in the medical profession could be exacerbated if burned-out physicians retire early or leave the profession altogether. Physicians suffering from burnout are less efficient and productive.

The emergency department (ED) was responsible for patient triage during the first COVID -19 epidemic. Containment and isolation of suspected COVID -19 infections was made possible by triage in the emergency department (Jaffe et al., 2021). However, the growing number of patients in emergency departments has a negative impact on the mental health of staff, affecting their workload, risk of infection and mental health. Because of the spread of “severe acute respiratory syndrome (SARS)”, the virus has been found to cause significant anxiety among staff at ED, particularly nurses. It has also been found to affect workers who have contracted SARS, especially those with long-term mental health effects (Xiao et al., 2020).

In China, rates of depression and anxiety ranged from 12.2% to 50.3% among health workers, particularly nurses and other frontline health workers, during the early stages of the pandemic COVID -19. According to a comprehensive analysis of research conducted largely in China, the prevalence of anxiety is 23% and depression 22.8% among healthcare workers (Z.-H. Wang et al., 2020). Similar results were also found in Italy at 13 and 14. In these studies, anxiety and depression symptoms were not

followed up and only one measurement was taken in each case (Douplat et al., 2022).

In Jordan, the COVID -19 outbreak has had a negative impact on the mental health of health workers. There are few studies examining the psychological impact of COVID -19 on Jordanian health workers. Alnazly et al. (2021) studied the fears, anxieties, grief, stress and social support of Jordanian health workers, among others, during the outbreak of COVID -19. COVID -19 was identified as a concern based on the study's findings. Anxiety (35%), depression (60%) and major depression (40%) were common.

2.8 Health Services Provider in Jordan

Ministry of Health

Health services in Jordan are provided by four main providers; the Ministry of Health, which is responsible for public hospitals, the military, the commercial sector and non-governmental organizations (NGOs) According to Alrawashdeh et al. (2021). Jordanians use a variety of health care providers, are registered in many health insurances schemes, each with its own funding, and benefit system (AlQutob et al., 2020).

Royal Medical Service

"The Royal Medical Service" (RMS) provides medical services to the military. RMS. provide secondary and tertiary services. In addition to providing care to military and security personnel, RMS now also cares for the families of military personnel and serves as a referral centre for civilian Jordanians in need of highly specialized medical care (Sultan & Crispim, 2018).

Private Sector and NGOs

Hospitals operated by the private sector are mainly located in Amman, Irbid and Zarqa. Around 80 non-governmental organizations (NGOs) in Jordan provide mental health services, including running the only mental health day centre in the country. UNRWA provides primary health care for over 1.9 million Palestinian refugees (Khader, 2021).

Jordan's mental health care system has both strengths and weaknesses (Naser et al., 2020). Mental health authorities are aware not only of the difficulties the country faces, but also of the steps that need to be taken to address these challenges. In addition to integrating mental health services into primary health care, the Ministry of Health has psychiatric departments in general hospitals and community mental health centres. In Jordan, mental health services are free or low-cost for both Jordanians and non-Jordanians. In addition to foreign interest in helping Jordan reform mental health, civil society engagement in mental health is also growing (Al Ali et al., 2017).

A study by Pinheiro and Jaff (2018) on the health needs of Syrian refugees in Jordan shows that Jordan still faces a number of challenges when it comes to improving mental health services. Khader (2021) reports that more efforts need to be made to reorganize and strengthen mental health management, and that intersect oral collaboration needs to be strengthened. Only a very small amount of money is allocated for mental health. The availability of mental health medicines in PHCs is limited. There are no mental health information systems and no mental health departments or sub-departments in Jordan. Mental health human resource plans have yet to be developed.

According to the World Health Organization (2018), several aspects of mental health are addressed in the National Strategic Health Plan (2018-2022), Health Sector Reform (2018-2022) and the National Health Sector Strategy for Jordan (2016-2020). Jordan has published its National Mental Health and Substance Use Action Plan (2018-2021).

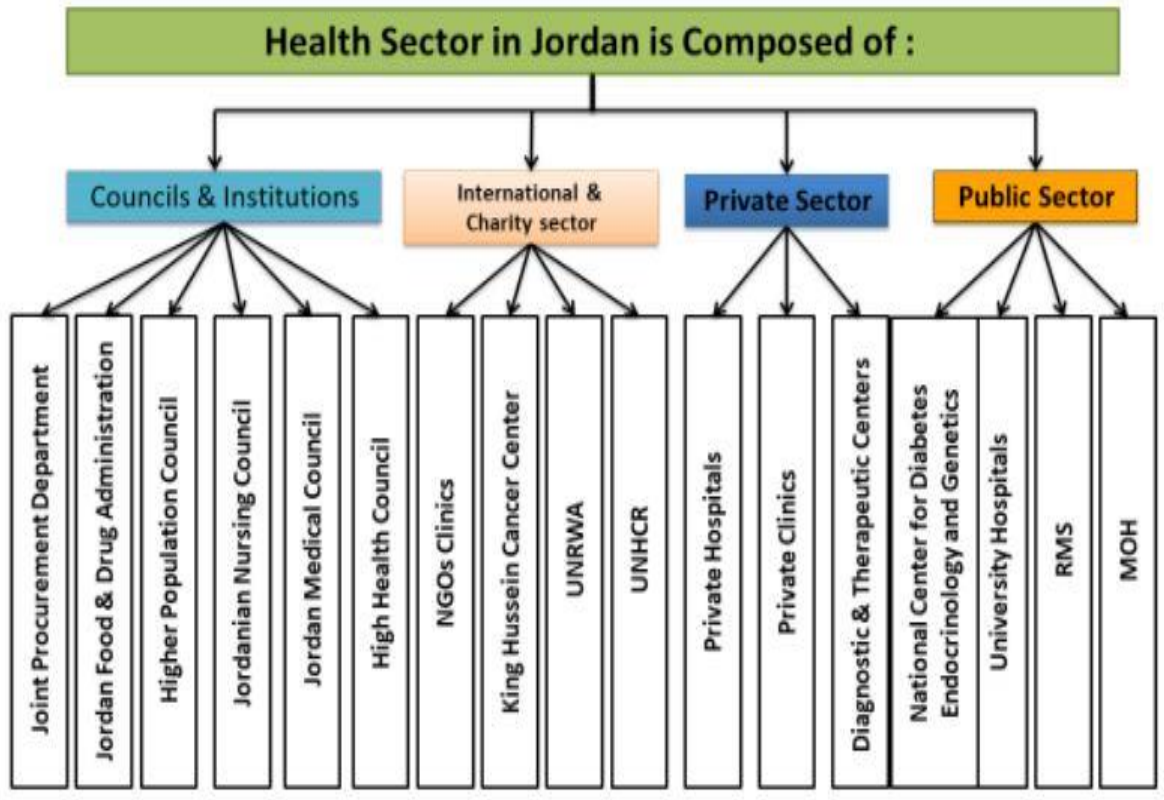


Figure 2.2
Health sector in Jordan (National Human Resources for Health Observatory)

2.9 Al-Bashir Hospital

Al-Bashir Hospital was established in 1954 and is the largest government hospital in Jordan. Patients referred from other areas of the country's health facilities can receive medical services at the hospital, as can government employees and their families, impoverished families in Amman, and the families of government employees. A competent team of physicians is available at this facility. It is equipped with the latest technology. Medical education and healthcare are provided to the community in line with the hospital administration's commitment to quality. The aim is to become one of the leading institutions in the community, providing health care and medical education. According to 2017 MOH statistics, the hospital has 1,150 beds and 3,200 staff (Al-Damen, 2017).

According to USAID (2022), Jordan, which has over 650,000 registered Syrian refugees, is struggling to provide adequate medical care due to the ongoing unrest in the region. Jordan is struggling to meet the increasing demand for medical treatment as several facilities are at or near capacity. Primary health care has deteriorated, as has the quality of medicines. Al-Bashir Hospital, Jordan's largest public hospital complex, is now in dire straits. Every day, 1,500 people are treated in the Al Bashir emergency room. These are mostly low-income Jordanians or immigrants from the crisis areas of the Middle East. The original emergency room was built in the 1950s and did not have the necessary technical and staffing capacity. USAID has applied for funding to build a brand new, state-of-the-art emergency room for the Al Bashir Hospital Complex, which has been highlighted by the Ministries of Health, Public Works and Housing as an immediate and important infrastructure priority in Jordan.

An estimated 50,000 people will be able to use the facility, which has state-of-the-art digital X-ray, CT scanning and ultrasound equipment, every month. A brand-new operating theatre, surgical transport system and intensive care units will be supported by innovative laboratories and patient management information systems. Al-Bashir Hospital has been changed to Al-Bashir Hospital Administration as each department has become an independent administration and a major expansion of all buildings has been undertaken. new Emergency Department building meets American Institute of Architects and international patient safety and infection control standards, enhancing the hospital's ability to respond to emergencies more quickly and efficiently to meet the growing demand for emergency services.

2.10 Mental Health Support Programs and Influence of Intervention for Physicians at Emergency Departments

Health workers and other key staff are at greater risk when they are under stress and exposed to psychological hazards (Ghareeb et al., 2021). According to Pappa et al. (2021), burnout is often caused by a combination of variables, including worry and an unusually high workload. This increased burden of psychological anxiety should be prioritized as a public health concern. Stress, terror and moral harm can be mitigated through interventions to improve mental health (Gruber et al., 2021). A significant number of key workers are at risk of long-term mental illness, and the long-term functioning of the health system is also at risk (Rana et al., 2020). According to Mohammed (2020), better social and emotional support is essential to prevent long-term impairment, especially given the constant pressures the system places on individuals and healthcare, and COVID -19.

Aguirre Velasco et al. (2020) report that interventions delivered both within and outside the health system at the primary and secondary prevention levels can help promote mental health. This is particularly important for critical personnel. For example, Hammonds et al. (2020) said that the employer can develop and implement internal rules to provide additional support to stressed employees or provide access to care outside the company when necessary and desired. There is also room for primary prevention measures, for example, Dixon et al. (2019) clarify that employers can give their employees some discretion over excessive workload or work tasks, or government initiatives that provide a minimum annual income or promote healthy lifestyles.

The reinforcement of a variety of preventive factors can take place at different levels and in different places. The Swiss cheese model provides a useful heuristic to illustrate how exposure and mental health are related, although it is difficult to capture this synergy. As shown in Figure 2.6.

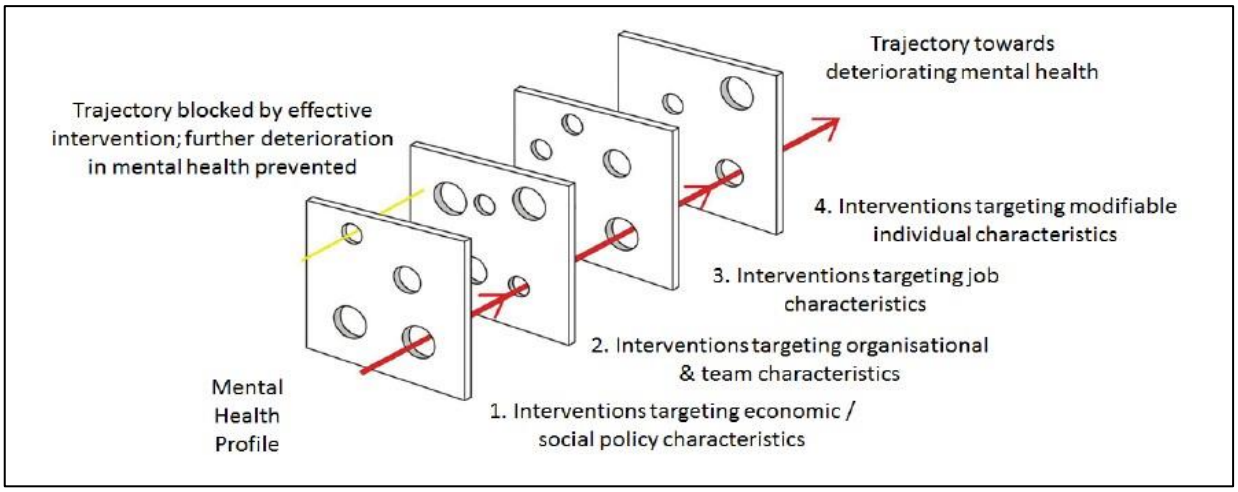


Figure 2.3
"The Swiss Cheese Model for Promoting the Mental Health of Health Care Workers
Source: Reason's Swiss cheese model combining person and systems approaches to human fallibility (Reason, 2000)".

"The Swiss cheese model" assumes ideal "mental health" and vividly shows how future deterioration of mental health can be avoided by closing the "holes" in the different phases. According to Wiegmann et al. (2022), the Swiss cheese model is not a comprehensive guide to achieving ideal "mental health", This is a particularly useful heuristic because it provides four useful benefits for critical workers.

According to Dekker (2019), its application in safety and the workplace requires, first, that the people who need to use it are actually familiar with it. Secondly, it delegates mental health to both people and systems. As outlined in (Hignett et al., 2018; Johnson, 2021; Phillips et al., 2018), the people approach focuses on interventions somewhere at the personal level, while the systems approach focuses on the interplay between the individual, their working conditions and the regulatory system. Each cheese slice represents a particular level of intervention that contributes to the psychological well-being of employees. For example, it shows management's attempts to create safeguards, barriers and defence has to prevent deterioration of mental health. In relation to the third stage (Larouzee & Le Coze, 2020) it is clear that any precaution or intervention may have vulnerabilities or 'holes'. In this illustration, the "holes" are ignored risk and/or protection variables. If several "holes" line up and make employees vulnerable, mental health will deteriorate. If the 'holes' are filled with many interventions at multiple levels, the downward spiral of mental health will be slowed down. This underscores the need for multi-layered interventions that address different risk and protective variables at many levels to ensure that all people, especially the most vulnerable, benefit equally and that no one is left behind. Finally, Cunha et al. (2022) shows

how the different levels of participation are weighted. Large-scale, broad-based economic and social policies are needed to support the largest possible number of critical workers. Additional support is available for those who want to focus on workplace and team organization. For those who need additional support, there are treatments that target specific work characteristics. As long as the earlier levels of intervention are in place, the last level includes individual-level treatments that should be effective.

2.11 Psychosocial Factors Affecting Mental Health

2.11.1 Physicians Trauma

Witnessing human misery, coming into contact with victims of assault and abuse, watching someone die, being confronted with the body of someone who has recently died or a decomposing corpse are all traumatic events for physicians (Heyman et al., 2018). Although having witnessed a traumatic event is required for a diagnosis of "PTSD", the vast majority of people who witness a traumatic event do not develop "PTSD" (Geronazzo-Alman et al., 2017). However, "there is a clear link between increasing exposure to a traumatic event and an increased likelihood of developing PTSD" (N. D. Smith & Cottler, 2018).

2.11.2 Stress in Physicians Workers

Occupational stress can result from workplace-related organizational or operational problems. Organizational stress includes perceptions of employee shortages, discrimination, lack of resources and managers focusing only on the problems rather than the positives. The inherent hazards of the workplace, including shift work, the risk of coming to harm at work, and building a social life outside of work are examples of workplace stresses (Johnston et al., 2022).

2.11.3 Fatigue

Fatigue is a common complaint in people suffering from mental illness and is described as a reduced ability to perform physically or cognitively compared to normal (Halabchi et al., 2017). Furthermore, Yong (2021) found that fatigue can be a significant risk factor involved with depression. In addition, Fatigue has been implicated in aeroplane crashes and near misses, as well as clinical errors among inexperienced physicians (Wakeman & Langham Jr, 2018).

2.13.4 Chronic Pain

Pain that lasts longer than three months is referred to as chronic pain, which may include musculoskeletal pain. Musculoskeletal injuries are common among emergency medical workers due to the physical demands of the job (Benoliel et al., 2019). Friedenberg et al. (2022) have found that

chronic pain can lead to increased anxiety and depression. Among physicians in the United States, musculoskeletal complaints affect 50% of the workforce. A report Wanniarachchi et al. (2020) found that 72% of Iranians suffer from back, neck and leg pain.

2.11.5 Sleep

The quality of sleep plays an important role in predicting mental and physical health. Researchers have found a link between poor sleep quality and mental health (Wong, 2020). According to the few studies that have been conducted on this topic among physicians, poor sleep quality is a serious problem for physicians (W. A. A. Khan et al., 2020). According to Machowska et al. (2020), 68-72% of Australian physicians reported poor sleep quality. Due to sleep loss and constant changes in sleep patterns, physicians are more likely to have poor sleep quality due to shift work.

2.11.6 Physical Activity and Exercise

According to World Health Organization (2019) A physical activity involves the use of skeletal muscles to perform bodily functions, which increases energy expenditure. Physical activities include walking, housework, farming, work and sports. A person's level of physical activity can have various effects on health. Inactivity has been linked to obesity, diabetes, heart disease, anxiety and depression, as well as a higher risk of obesity, diabetes and heart disease. An exercise programme aims to improve health and fitness by increasing physical activity. Stress-related disorders are most often treated with exercise as a coping method.

The level of physical activity among physicians have not been studied in depth. Rankin (2019) found a slightly negative association between physical activity and anxiety and between physical activity and depression among physicians serving in metropolitan Victoria. In contrast, no significant association with obesity was found among physicians in rural Victoria.

2.11.7 Life Quality

There are a number of factors that influence how well a person lives, including their psychological, spiritual, social, economic, family, and occupational and health satisfaction (Shek & Liang, 2018). Studies by Obuobi-Donkor et al. (2022) have found that people with depression and post-traumatic stress disorder have a lower quality of life. Depression and post-traumatic stress disorder are common among physicians. However, the quality of life of physicians has only been investigated in one study. As Wild et al. (2018) show, trainee physicians with severe depression PTSD have a significantly lower quality of life than their peers without mental illness.

2.11.8 Social Matters

Mental health outcomes are related to family and social interactions. Several studies have shown that family and social support can act as coping strategies when people are distressed (Auerbach et al., 2018). Social ties are associated with a lower likelihood of depression and a higher likelihood of recovery after depression (Al-Amer et al., 2022). Physicians with PTSD experience greater stress related to role conflict than those without PTSD. In the general population, depression is also associated with work-family tensions. In South African trainee physicians, Alenyo et al. (2018) found that a significant decrease in perceptions of social support predicted PTSD. There has been limited research on paramedic mental health in relation to sociocultural context. More research is needed on other mental disorders that are likely to be influenced by the world and society.

2.12 Theory of Stress, Coping and Adaptation

Professor Lazarus' adaptation, stress and coping theories formed the basis for the study (Lazarus, 1974). People's reactions to stressful situations are the focus of this hypothesis. (Folkman & Moskowitz, 2004; Lazarus, 1989) define stress as adaptation to stressful situations, coping with stressors and evaluation of the person in relation to the environment. In addition to physical reactions to stress, the concept also takes into account psychological reactions such as despair and anxiety (Graignic-Philippe et al., 2014). Despite its origins in the behavioural sciences, stress, coping and adaptation continue to be taken up by healthcare researchers around the world (Folkman & Moskowitz, 2004; McEwen & Wills, 2014). Using this concept, physicians working in emergency departments have been studied for their coping techniques. This idea not only connects concepts such as stress, coping techniques and psychological responses of physicians in emergency departments, but can also bring a psychological component to the concept.

2.13 Operational Definition for The Study Variables

According to the APA Dictionary of Psychology, the operational definition for the study variables is as follows:

Depression: a negative affective state ranging from unhappiness and dissatisfaction to an extreme feeling of sadness, pessimism and dejection, which affects daily life. Usually, various physical, cognitive and social changes also occur, such as altered eating or sleeping habits, lack of energy and motivation, difficulty concentrating and making decisions, and withdrawal from social activities. It is symptomatic of a range of mental disorders.

Anxiety: an emotion characterised by apprehension and somatic symptoms of tension in which an individual anticipates imminent danger, disaster or

catastrophe. The body often mobilises to meet the perceived threat: Muscles become tense, breathing quickens and the heart beats faster. Anxiety is considered a future-oriented, long-lasting reaction that focuses on a diffuse threat, while fear is an appropriate, present-oriented and short-lived reaction to a clearly identifiable and specific threat.

Stress: the physiological or psychological response to internal or external stressors. Stress brings about changes that affect almost all systems of the body and influence how people feel and behave. It can manifest itself, for example, through palpitations, sweating, dry mouth, shortness of breath, fidgeting, accelerated speech, intensification of negative emotions (if they are already present) and prolonged duration of stress fatigue. Severe stress manifests itself through the general adaptation syndrome. By causing these mental and physical changes, stress directly contributes to psychological and physiological disorders and diseases, affects mental and physical health and reduces the quality of life.

2.14 Chapter Summary

In general, it is still unclear what the mental health of EMS practitioners is. The physical and emotional health of EMS staff is of critical importance as they are on the frontline of emergency care. Accordingly, this study examines the state of mental health of EMS staff nationwide. This objective will be achieved by accomplishing two goals: estimating the prevalence and severity of depression, anxiety and stress among board-certified emergency medical technicians; comparing clinical depression, anxiety and stress between cases and controls from the same cohort based on demographic and job characteristics (as defined by the DASS-21).

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter sets out the research plan and the research methodology. In this section of the report, the data collection tools and methods, sampling protocols and data analysis procedures are explained and discussed in detail. It also discusses the coding of the data, the entry of the data and the statistical procedures that were used to organize the data so that it could be analysed.

3.2 Methodology

3.2.1 Study Design

A descriptive cross-sectional study design

3.2.2 Primary Outcome

To measure the prevalence of depression, anxiety and stress among emergency physicians by using DASS21

3.2.3 Secondary Outcome

To identify the risk factors of the depression, anxiety and stress symptoms emergency physicians

3.2.4 Study Population

The study population consists of 152 physicians in the emergency department of Al Basheer Hospital, as shown in Table 3.2. The inclusion criterion is a doctor working in the emergency department and the exclusion criterion is a refusal to participate.

3.2.5 Sampling Technique

This study included the entire study population without the need for a representative sample. The study participants were physicians working in the emergency department of AL Bashir Hospital. The study aims to include at least 70% of the following groups:

Table 3.1

Physicians working at the emergency department at AL Bashir hospital

Orthopedic	11
Emergency	72
Pediatric	13
Urology	5
Neurosurgery	5
Radio	4
Family medicine	12
Surgery	22
anesthesia	8
Total	152

3.2.6 Pilot Testing

Ten participants from AL Bashir Hospital were included in the pilot study. The pilot study participants were not included in the overall study sample. To see if the sample population understood the questions in the study instrument and if they found them confusing or unclear.

3.3 Instrumentation

Data were collected from research participants using structured questionnaires and modified "DASS-21 versions". The structured questionnaire consists of two sections (see Appendix A for a copy). The first section asked various socio-demographic questions such as age, gender, marital status, department, and years of service, position or rank. The second section of the survey asked about stress factors. Physicians' stress, anxiety and depression were measured using a modified version of the "DASS-21". Anxiety, depression and stress are measured by self-report in the "DASS-21". Study participants answered seven questions about how they deal with these issues. Therefore, each statement on the "DASS-21" assesses depression, anxiety or stress. There are also four answers on the Likert scale, ranging from 0 (does not apply to me at all) to 3 (applies to me most of the time). Depending on the severity of the symptoms, the scores are categorised as "normal", "mild", "moderate", "severe" or "very severe" (Lovibond & Lovibond, 1995). Tran et al. (2013) report that both the English and non-English versions of the "DASS-21" are highly reliable (Cronbach's alpha > 0.7). Below are the scores and ratings of the "DASS-21".

Table 3.2
"Ratings and Scores of DASS-21"

	"Depression"	**"Anxiety"**	**"Stress"**
"Normal"	0-9	0-7	0-14
"Mild"	10-13	8-9	14-18
"Moderate"	14-20	10-14	19-25
"Severe"	21-27	15-19	26-33
"Extremely Severe"	28 +	20+	34+

Source: (Lovibond & Lovibond, 1995).

As a scarcity of the studies have been conducted examining the psychological effect of working in the emergency department on health-care worker psychological health in Jordan, therefore, the present study aims to assess the respective levels of anxiety, depression and the associated factors, experienced by physicians in emergency units at Al-Basheer Hospital.

The DASS consists of three self-report scales that measure the negative emotional states of depression, anxiety and stress. The DASS was constructed not just as another scale to measure conventionally defined emotional states, but to facilitate the process of defining, understanding and measuring the pervasive and clinically significant emotional states commonly described as depression, anxiety and stress. Each of the three DASS scales contains 14 items divided into subscales of 2to 5 items and similar content. The depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest or engagement, anhedonia and sluggishness. The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety and subjective experience of anxious affect. The stress scale is sensitive to chronic non-specific arousal. It assesses difficulty in relaxing, nervous agitation, mild annoyance or excitement, irritability or over-reactivity, and impatience. Subjects are asked to rate the extent to which they have experienced each state in the past week using 4-point severity and frequency scales. The scores for depression, anxiety and stress are calculated by summing the scores for the corresponding items. In addition to the basic questionnaire with 42 items, a short version, the DASS-21, with seven items per scale is also available. An earlier version of the DASS scales was called the Self-Analysis Questionnaire (SAQ). Because the DASS scales have been shown to have high internal consistency and to provide meaningful discrimination in a variety of situations, the scales should meet the needs of both researchers and clinicians who wish to measure current state or change in state over time (e.g., over the course of treatment) on the three dimensions of depression, anxiety and stress.

3.4 Study Tool

For DASS21: is a set of three self-report scales designed to measure the emotional states of depression, anxiety and stress.

Each of the three DASS-21 scales contains 7 items, divided into subscales with similar content. The DASS-21 is based on a dimensional rather than a categorical conception of psychological disorder. The assumption on which the DASS-21 development was based (and which was confirmed by the research data) is that the differences between the depression, anxiety and the stress experienced by normal subjects and clinical populations are essentially differences of degree.

The participants were given a series of questionnaires that included a demographic profile form and the 21-item Depression Anxiety Stress Scale (DASS21). The demographic profile form gathered information on age, gender, ethnicity, marital status, length of service, total shifts worked, number of night shifts worked, and the hospital's operating system.

The DASS-21 was used to assess participants' stress, anxiety, and depression levels. The participants were requested to fill up the questionnaire and return the questionnaire immediately after completion.

The original version of DASS-42 was adapted and simplified to create DASS-21. It is a self-report scale that has been used in a variety of settings to measure depression, anxiety, and stress-related attitudes. One thing to keep in mind when using the DASS-21 is that it measures negative emotional states based on clinical symptoms, but it is not a tool for clinical diagnosis.

There are 21 questions with 7 items for each emotional state. The items for the depression scale focus on low mood and low self-esteem, the anxiety scale on fear response to mental arousal, and the stress scale on persistent arousal and tension. The DASS-21 questionnaire was translated into Arabic and validated based on a pilot study with 10 participants. The scores of the individual questions were added and multiplied by two to obtain the original 42 items.

The severity rating index was used to identify the respondent's state in each regard. The scores for depression, anxiety, and stress were totalled, and the severity rating index was used to determine the respondent's status in each regard. For each DASS subscale, the severity rating index was as follows: normal (0–9), mild (10–13), moderate (14–20), severe (21–27), and extremely severe (28+). Normal (0–7), mild (8–9), moderate (10–14), severe (15–19), and extremely severe (20+) anxiety scores are used. Normal (0–14), mild (15–18), moderate (19–25), severe (26–33), and extremely severe (34+) are the stress levels. Cronbach's alpha values for depression, anxiety, and stress were 0.91, 0.84, and 90, respectively, in the original study.

Any scores of depressions, anxiety and stress exceeded 13, 9, and 18 respectively were considered as screen positive. DASS-21 has high validity and reliability. Previous results showed a high sensitivity for depression (89%), a negative predictive power of 96% and specificity of 71%.

3.5 Data Collection

An online questionnaire was used to obtain data from participants. This form of data collection is often preferred by researchers as it allows them to observe the environment in which individuals or samples operate and thus analyse their responses in more detail. Questionnaires are often considered an efficient tool for collecting primary data, as the individual items on each form are easy to understand and a large number of people can be contacted.

A sample of data was collected from July to August, 2022. In order to collect the data, respondents were informed in advance. According to Bourque and Fielder (2003), surveys can currently be conducted in three

ways: self-administered surveys, systematic questionnaire surveys, and structured observations. The primary data for this study was collected using a self-administered questionnaire.

The researcher chose to distribute the questionnaire online using Google Docs due to the circumstances. It is also proven that people are more honest when the interviewer is not present when there is no physical contact.

3.6 Data Analysis Technique

Statistical Package for the Social Sciences (SPSS) version 25.0 was used to prepare and code the questionnaire. SPSS statistical software was used to analyse the data from each questionnaire. Before processing the data, each entry was checked for accuracy. The data were analysed using descriptive statistics. In addition, frequencies and percentages were used to describe the demographic characteristics of the respondents. An analysis of the multivariate data, also known as descriptive statistics, was conducted using the DASS scale, which contains 21 items divided into 3 subscales of 7 items each. The items were weighted on a Likert scale from 0 to 3, where 0 stands for "does not apply to me at all" and 3 for "applies to me very much" (Langer et al., 2016). The results were summarised using statistical tables and diagrams. Based on the results and the study objectives, appropriate conclusions were drawn from the literature.

3.7 Ethical Consideration

Ethical considerations taken into account when formulating concepts, norms and rules. Aguinis and Henle (2004) argue that the rights of respondents should be protected through ethical research. Nuti et al. (2014) suggest that researchers should conduct their research with ethical vigilance to maintain the quality of their studies. Pratt and Loizos (1992) established ethical principles for data collection in this study. Respect and decency were shown to all. Anonymity and privacy were guaranteed to the participants. All participants in this study gave their consent voluntarily. Only data from all respondents were used in this study and in academic research. Participants in the study can withdraw from the study.

Access to the study area: In most cases, it may be difficult to gain permission to conduct the study and to recruit participants in the study. However, in order to gain access to the study area, a letter of introduction was issued by the Head of the Department of Mutah University and then forwarded to the Medical Director of Al-Bashir Hospital to obtain consent to conduct the study.

Confidentiality and anonymity: Anonymity of the respondents was ensured as no individually identifiable information such as name, email address, home address, mobile phone number or national insurance number

was collected. In addition, the data collected was kept confidential, publications based on this study had no negative impact on the respondents as identities, and the questionnaire did not contain any personal information that could easily identify respondents.

CHAPTER FOUR
FINDINGS

4.1 Introduction

This study aimed to identify the prevalence of mental health disorders (depression, anxiety and stress) level among emergency physicians at Al- Bashir hospital, besides to explore the main risk factors that contributing to mental health problems. Furthermore, this chapter commences with summarizing study's socio-demographic variables and presents the statistical analysis finding to achieve study objectives.

4.2 Data Scanning and Cleaning

Before conducting the inferential statistical analysis, several steps were taken to check the data to ensure that the data flow was suitable for the analysis in order to obtain valid results. First, descriptive statistics were conducted to check for missing, undefined and outlier values, in addition, the normal distributions for the scale-dependent variables (depression, anxiety and stress) were checked and the assumptions of the regression analysis were tested. The results of the data reviewed showed that there were no missing, undefined or outlier values and that the (DASS) totals were normally distributed, as per the Kolmogrove-Siminrove test ($p > 0.05$), and the assumptions of the regression analysis were met, as described later in this chapter.

4.3 Socio-Demographic Characteristics

The participants in this survey have been asked several questions related to their social characteristics, work status, physical and mental health status and workplace, the participants' demographical data were divided into four major domains to make the sample description easier as follows.

4.3.1 Participants' Social Characteristics

A total of 107 physicians who are working in emergency department at Al- Bashir hospital participated in this study. The vast majority of them are males 91 (85.0%) and Jordanian citizens, 104 (97.2%) the sample mean age of was 33.83±6.04 years old. Three-quarters of the sample were married with a median number of dependent that they have in the family (Md = 4). Besides, 88 (82.2%) of them live with family. Moreover, more than half of participants 57 (53.3%) have an education level of bachelor degree. Additionally, most of physicians 48 (44.9%) have monthly income between (1000-2000jds), and 59 (55.1%) of them reported that they having a financial difficulties effect on their life. Table (4.1)

4.3.2 Participants' Working Status Characteristics

In this survey, half of sample was emergency physicians and specialist in profession. The mean of work experience after getting IMTEAZ was (7.30±5.50) years. Furthermore, the descriptive statistics revealed that majority of physicians are working most of the time at night shifts, on weekends 67 (62.6%), and 60 (56.1%) respectively, with an average of workload hours per week (50.05±6.36). On other hand 49(45.8%) of them work some of the time on night/weekend call duties in addition to their daily work. Table (4.1).

4.3.3 Participants' Health Status Characteristics

Regarding participants' physical health status, the vast majority reported that they did not perform exercise on regular basis 92(86.0%) and the number of daily sleeping hours was below normal rang with an average of (6.34±1.80) hours/day. Moreover, 22 (20.6%) reported that they have chronic illness with 18(16.8%) currently going on regular medication and due to the participant can choose more than one chronic illness if he/she has, a multiple response analysis shows that (57.6%), and (18.2%) of responses have low back pain and migraine respectively. Furthermore, the survey has investigated participants' smoking status as a part of physical health condition and the results have shown that more than half of sample 60 (56.1%) are current smokers and 10 (9.3%) are ex-smokers with an average number of cigarettes that being smoked (19.70±5.20) cigarettes /day and the average of smoking duration was (26.9±6.95) months, additionally 29 (27.1%) of physicians use water pipe smoking on average of (4.42±1.23) times per week.

In term of participants', psychological health status, 11(10.3%) have a psychological disease, suffered from recent traumatic events and received psychological counselling. While, 61(57.0%) suffered from social problems caused major stress to their life. Furthermore, 17 (15.9%), and 31 (28.9%) have currently and previously diagnosed with depression and anxiety respectively. Additionally, the behavioural technique was a dominant method for depression and anxiety treatment, concerning psychological support program only 8 (7.5%), and 4 (3.7%) of physicians have heard about such program for physicians and for emergency physicians particularly in Jordan respectively. Table (4.1).

4.3.4 Participants' Workplace Abuse Characteristics

In this survey four workplace abuses namely (verbal, physical, threatening and harassment) have been investigated and the results have shown that 23(21.5%) and 66(61.7%) have ever exposed to verbal and physical abuse respectively, and the multiple response analysis revealed that the most of verbal abusing source are come from the patients and

supervisor (58.8% and 12.5%) respectively while (65.4% and 13.5%) for physical abuse respectively.

In the same context 46(43%) have ever exposed to threatening and the most of threats source are come from the patients and supervisor (61.4% and 12.0%) respectively, besides about 22(20.6%) of sample have ever exposed to harassment and the harassers were patients (67.4%) and family (18.6%). Table (4.1)

Table 4.1

Summarizes detailed sample characteristics

Variables	**Category**	**Frequency**	**Percentage**	**Mean ± SD**
Social characteristics				
Gender	Male	91	85.0	
	Female	16	15.0	
Marital status	Single	27	25.2	
	Married	80	74.8	
Age/years				33.83±6.04
Number of dependent. *Md*				4
Living with	Alone	10	9.3	
	Friends	9	8.4	
	Family	88	82.3	
Education level	Bachelor	57	53.3	
	Jo-board	14	13.1	
	Others	36	33.6	
Monthly income/JDS	<1000	39	36.4	
	1000-2000	48	44.9	
	>2000	20	18.7	
Financial difficulties	No	48	44.9	
	Yes	59	55.1	
Working status				
Professional groups	GP	9	8.4	
	Resident	31	29.0	
	Specialist	54	50.5	
	Consultant	13	12.1	
Specialty	ER	55	51.5	
	MD	10	9.3	
	Paediatrics	14	13.1	
	Surgery	13	12.1	
	Others	15	14.0	
Working on night shift	Not at all	9	8.4	
	Some of the time	31	29.0	
	Most of the time	67	62.0	

Working on weekends	Not at all	4	3.7
	Some of the time	43	40.2
	Most of the time	60	56.1

Table 4.2
Variable's scale (1)

Variables	**Category**	**Frequency**	**Percentage**	**Mean ± SD**
Working status				
Working on night/weekend duties in addition to daily work	Not at all	26	24.3	
	Some of the time	49	45.8	
	Most of the time	60	29.9	
Work experiences after IMTEAZ				7.30±5.50
Workload hours per week				50.05±6.36
Health status				
Having chronic illness	No	85	79.4	
	Yes	22	20.6	
Performing exercise regularly	No	92	86.0	
	Yes	15	14.0	
Seeping hours/day				6.34±1.80
Taking medication regularly	No	89	83.2	
	Yes	18	16.8	
*Chronic illness	Low back pain	19	57.6	
	Migraine	6	18.2	
	Arthritis	4	12.1	
	Hypertension	2	6.1	
	Heart problem	1	3.0	
	Diabetes	1	3.0	
Smoking status	Never	37	34.6	
	Ex-smoker	10	9.3	
	Current smoker	60	56.1	
Number of cigarettes /daily				19.70±5.20
Duration of smoking/month				26.9±6.95
Having water-pipe	No	78	72.9	
	Yes	29	27.1	

Number of having water-pipe				4.42±1.23
Having psychological diseases	No	96	89.7	
	Yes	11	10.3	
Suffering from traumatic event	No	96	89.7	
	Yes	11	10.3	
Receiving psychological counselling	No	96	89.7	
	Yes	11	10.3	
Social problems causing major stress to your life	No	46	43.0	
	Yes	61	57.0	
Diagnosed with depression	Never	90	84.1	
	Currently	8	7.5	
	Previously	9	8.4	
Depression treatment modality	Pharmacolo	3	17.6	
	gical	8	47.1	
	Behavioural	6	35.3	
	Both			

*Multiple response analysis by percent of responses

Table 4.3
Variable's scale (2)

Variables	**Category**	**Frequency**	**Percentage**	**Mean ± SD**
Health status				
Diagnosed with anxiety	Never	76	71.0	
	Currently	13	12.1	
	Previously	18	16.8	
Anxiety treatment modality	Pharmacologic	9	29.0	
	al	16	51.6	
	Behavioural	6	19.4	
	Both			
Psychological support program for physicians in Jordan	No	99	92.5	
	Yes	8	7.5	
Psychological support program for ER physicians in Jordan	No	103	96.3	
	Yes	4	3.7	
Workplace abuse				
Verbal abuse	No	84	78.5	
	Yes	23	21.5	
Verbal abuse sources	Patients	80	58.8	
	Supervisor	17	12.5	
	Family	14	10.3	
	Management	13	9.6	

	Colleagues	12	8.8
Physical abuse	No	41	38.8
	Yes	66	61.7
*Physical abuse sources	Patients	34	65.4
	Supervisor	7	13.5
	Family	5	9.6
	Colleagues	4	7.7
	Management	2	3.8
Threatening	No	61	57.0
	Yes	46	43.0
*Threatening sources	Patients	51	61.4
	Supervisor	10	12.0
	Family	8	9.6
	Colleagues	7	8.4
	Management	7	8.4
Harassment	No	85	79.4
	Yes	22	20.6
*Harassment sources	Patients	29	67.4
	Family	8	18.6
	Colleagues	3	7.0
	Supervisor	2	4.7
	Management	1	2.3

*Multiple response analysis by percent of responses

4.4 Answering Research Questions

Q1: what is the prevalence of depression, anxiety and stress among physicians in ED?

4.4.1 Depression scale

The descriptive statistics in table (4.4) show that (33.6%) of them sometimes have no positive feelings at all, (41.1%) of participants sometimes find it difficult to take initiative to do something, also 39.3% of the sample report that sometimes they have nothing to look forward to, also 33.6% and 35.5% of the physicians report that sometimes they feel down and do not feel like doing something. On the other hand, about half of the doctors feel that they are worthy persons and do not feel that their lives are meaningless. The mean depression score of the doctors was classified as moderately depressed (16.17±8.35) and the results show that 32 (29.9%) of the participants have major depression while 27 (25.2%) are moderately depressed. Table (4.4)

Table 4.4
Participants' depression score

Items	Did not apply N (%)	Apply some of time N (%)	Apply in good part of time N (%)	Apply most of time N (%)
1. I couldn't seem to experience any positive feeling at all	31(29.0)	36(33.6)	26(24.3)	14(13.1)
2. I found it difficult to work up the initiative to do things	23(21.5)	44(41.1)	27(25.2)	13(12.2)
3. I felt that I had nothing to look forward to	38(35.5)	42(39.3)	9(8.4)	18(16.8)
4. I felt down-hearted and blue	20(18.7)	36(33.6)	30(28.1)	21(19.6)
5. I was unable to become enthusiastic about anything	28(26.2)	38(35.5)	21(19.6)	20(18.7)
6. I felt I wasn't worth much as a person	55(51.4)	28(26.2)	11(10.3)	13(12.1)
7. I felt that life was meaningless	52(48.6)	26(24.3)	15(14.0)	14(13.1)
Sum means score				16.17±5.35
Depression levels				**N** **%**
Normal				33 30.8
Mild				15 14.0
Moderate				27 25.3
Sever				12 11.2
Extreme sever				20 18.7

4.4.2 Anxiety Scale

The results in Table (4.5) show that about one-third of the respondents had occasional dry mouth, worried about situations that caused panic and thought they were stupid, and were aware of the action of their heart without having to physically exert themselves, while about half of the participants did not experience difficulty breathing or trembling, nor did they feel close to panic or feel scary for no good reason. The mean score of anxiety of the doctors was moderate (12.97±7.20) and the results show that 40 (37.4%) of the sample had severe anxiety and 21 (19.6%) had moderate anxiety. Table (4.5)

Table 4.5
Participants' Anxiety score

Items	Did not apply N (%)	Apply some of time N (%)	Apply in good part of time N (%)	Apply most of time N (%)
1. I was aware of dryness of my mouth	28(26.2)	35(32.7)	27(25.2)	17(15.9)
2. I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)	49(45.8)	36(33.6)	15(14.1)	7(6.5)
3. I experienced trembling (e.g., in the hands)	53(49.5)	28(26.2)	14(13.1)	12(11.2)
4. I was worried about situations in which I might panic and make a fool of myself	33(30.8)	41(38.3)	18(16.8)	15(14.1)
5. I felt I was close to panic	57(53.3)	30(28.0)	11(10.3)	9(8.4)
6. I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)	39(36.4)	40(37.4)	19(17.8)	9(8.4)
7. I felt scared without any good reason	59(55.1)	29(27.1)	16(15.0)	3(2.8)
Sum score				12.97±4.20
Anxiety levels				**N** **%**
Normal				39 36.4
Mild				7 6.6
Moderate				21 19.6
Sever				12 11.2
Extreme sever				28 26.2

4.4.3 Stress Scale

The results in Table (4.6) show that more than one third of physicians have reported that they sometimes had difficulty in calming down (35.5%), tended to overreact to situations (36.4%), expended a lot of nervous energy (29.9%). In addition, a high percentage of doctors were observed to be sometimes agitated (42.1%), difficult to relax (40.2%), intolerant of anything that prevents me from continuing my work (47.7%)

and sometimes quite sensitive (41.1%). The mean stress level among the doctors was found to be moderately stressed (18.64±7.89) and the results show that 31 (29.0%) of the sample had high stress level and 23 (21.5%) had moderate stress level. Table (4.6)

Table 4.6

Participants' stress score

Items	Did not apply N (%)	Apply some of time N (%)	Apply in good part of time N (%)	Apply most of time N (%)
1. I found it hard to wind down	15(14.0)	38(35.5)	28(26.2)	26(24.3)
2. I tended to over-react to situations	34(31.8)	39(36.4)	25(23.4)	9(8.4)
3. I felt that I was using a lot of nervous energy	20(18.7)	32(29.9)	28(26.2)	27(25.2)
4. I found myself getting agitated	19(17.8)	45(42.1)	34(31.7)	9(8.4)
5. I found it difficult to relax	16(15.0)	43(40.2)	26(24.3)	22(20.5)
6. I was intolerant of anything that kept me from getting on with what I was doing	25(23.4)	51(47.7)	21(19.6)	10(9.3)
7. I felt that I was rather touchy	33(30.9)	44(41.1)	18(16.8)	12(11.2)
Sum score				18.64±4.89
Stress levels				**N** **%**
Normal				43 40.2
Mild				10 9.3
Moderate				23 21.5
Sever				20 18.7
Extreme sever				11 10.3

4.5 Assessment the Data for Conducting Multiple Linear Regression Analysis Test

It would be better to check multiple linear regression assumptions prior performing the analysis to decide if the data are fit to regression test, otherwise the test results may inaccurate or misleading, thus a numerous assumption in terms of normal distribution of standardized residuals of DASS score, linearity, outliers and Multicollinearity for each model were checked as follows.

4.5.1 Normality

It's a crucial point needs to be checked to ascertain that the data are following normal distribution, the histogram for standardized residuals for depression, anxiety and stress were created and the figure (4.1) demonstrates that the histogram for three variables are normally distributed, not skewed to either side with most of values lies under the curve and take a bell shape.

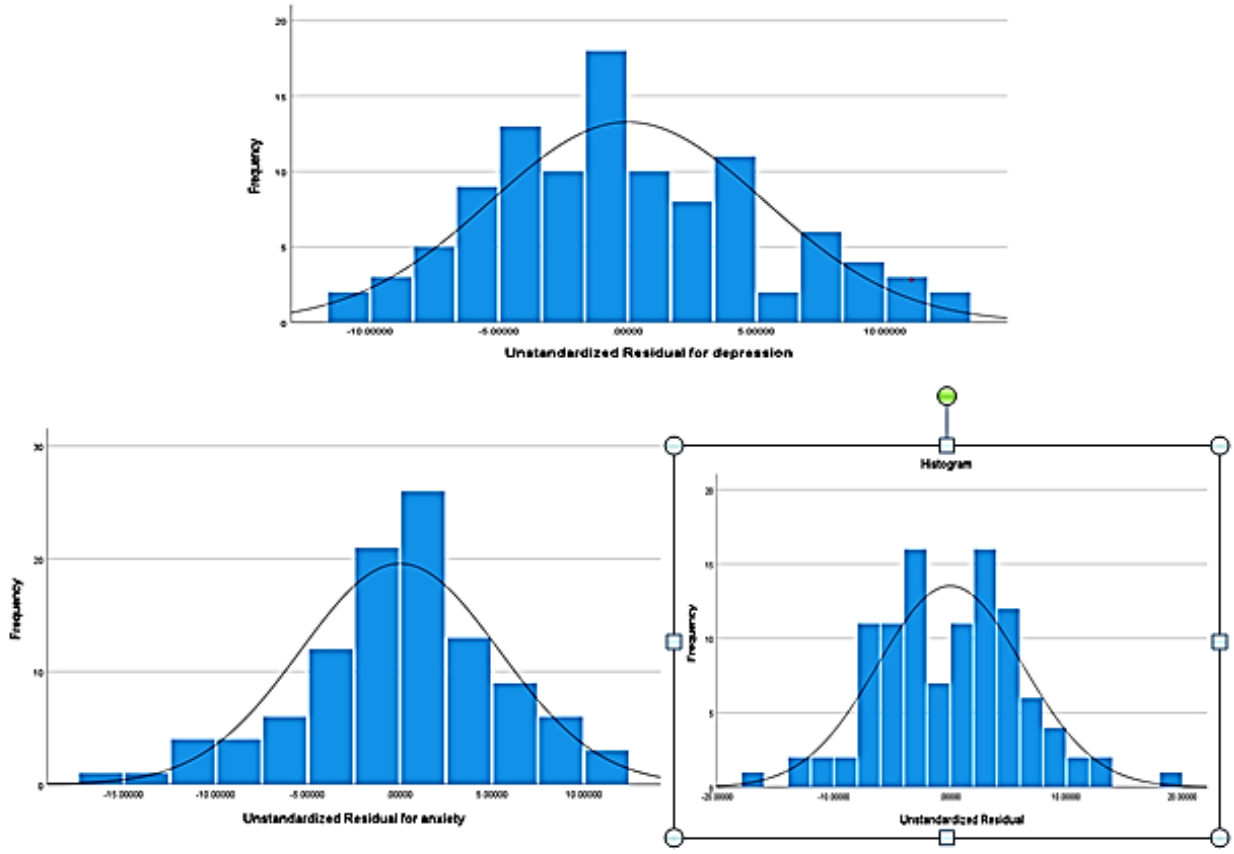
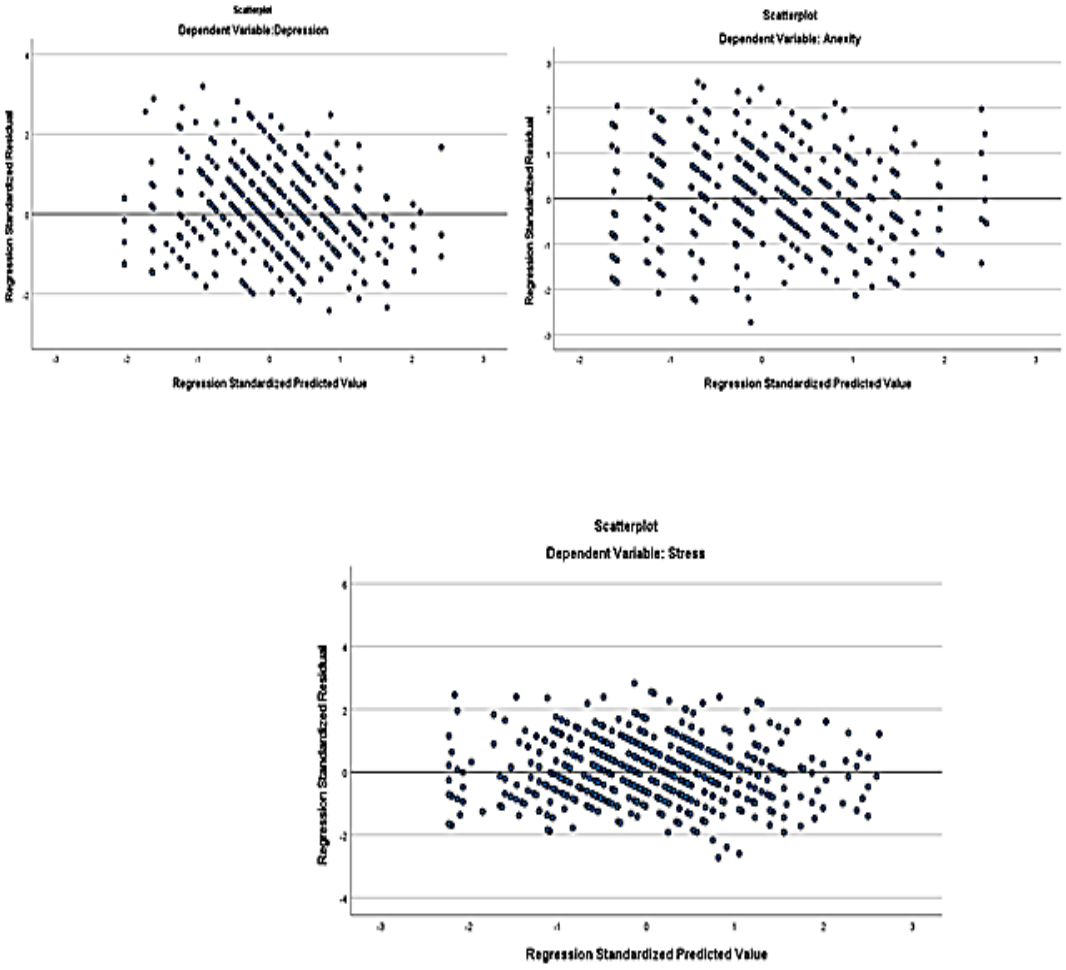


Figure 4.1
Normal distribution

4.5.2 Linearity and Homoscedasticity

Linearity refers to presence of linear relationship between predictors and dependent variable and it be expected that the most points falling on the straight line around the diagonal regression line and the homoscedasticity refers to error term that in which variance of the dependent variable is the same for all level of predictors and the figure (4.2) shows that the dots of three dependent variables lied uniformly around diagonal line and did not take a funnel shape which guarantee the both assumptions are satisfied.



Graph (2)

Figure 4.2
Linearity and Homoscedasticity

4.5.3 Outliers

The regression analysis is sensitive to outlier, Hence it should be mentioned if the standardized residual exceeded than 3.3 or below -3.3SD or if the Cook's distance above absolute one considers that the variable contains an outliers value, Moreover this assumption has been checked for three variables based on mentioned two methods of measurements and the regression analysis test results exhibited that the standardized residual and Cook's distance for three models were below 3.3 and under absolute one respectively. Thus, outliers have not been observed

4.5.4 Multicollinearity

It refers to presence of high correlation between predictors which can adversely effect on regression beta weight and standard error ,

and it checked based on variance inflation factor (VIF) and tolerance the model considers free of Multicollinearity if the VIF less than 10 and tolerance above (0.2),the results of each regression model analysis revealed that the predictors were not highly correlated together for DASS, since the VIF values for three model were less than 10 and tolerance above (0.2), thus the Multicollinearity does not exist

4.6 Risk Factors Contributing to Mental Health Problems

Q2: What Are Main Risk Factors Contributing to Mental Health Problems Among Emergency Physicians in Jordan.

Numerous demographical variables were entered into regression model to filter out their contribution to predict depressive, anxiety, stress symptoms. the stepwise multiple linear regression was suggested to use for all three models to answer this question, since its iteration for analysing the data depends on forward and backward method with criteria of probability of F value enter ≤0.05, and probability of F value to remove ≥0.100 (default). Furthermore, dummy variables were created for predictors that have more than two levels to explore the prediction of each level and the reference category was allocated corresponding to each predictor in the model.

4.6.1 Model (1) Predictors for Depressive Symptoms

Four predictors namely (ever exposed to verbal abuse, having current social problems, ever exposed to physical abuse and having board certificate) were left over in the final model and the results in table (4.7) demonstrate that the ever exposed to verbal abuse has explained ΔR^2 13.2% of depressive symptoms variation, then by adding having current social problems. The ΔR^2 reached 19.1%, then by adding ever exposed to physical abuse, the ΔR^2 reached 22.1% and finally when board certificate added to model, the ΔR^2 reached 24.8%. Indicating these four variables collectively have explained 24.8% of variation in depressive symptoms and the R^2 change at each iteration was statistically significant.

Table 4.7

Model summary of four predictors for depressive symptoms

Model	Predictors	R^2	Adjusted R^2	R^2 change	Sig F change
1	Ever exposed to verbal abuse	0.140	0.132	0.140	<.001
2	Having current social problems	0.206	0.191	0.066	0.004
3	Ever exposed to physical abuse	0.242	0.221	0.036	0.029
4	Having board certificate	0.276	0.248	0.034	0.031

In the same context to ascertain the prediction power of significant predictors to predict depressive symptoms among emergency physicians in Jordan, the results in table (4.8) showed the order of significant predictors as follows, being exposed to verbal abuse was found significantly associated with increase depressive symptoms by (B=7.697, p=0.002) unit on average. Similarly, if the physicians have a current social problem the depressive symptom would likely expect to increase by (B=6.310, p=0.002) unit on average higher than who have not current social problems. Likewise, those ever exposed to physical abuse are expected to increase depressive symptoms by (B=4.680, p=0.023) unit on average higher than to never exposed to physical abuse and finally having board certificate in medicine is significantly associated with increase depressive symptom by (B=6.207, p=0.031) unit on average compared with who having bachelor degree only.

Table 4.8

Final model of stepwise multiple linear regression analysis for depressive symptoms

Step 4	Predictors	B	SE	Beta	T value	Sig	Equation
Final model	Ever exposed to verbal abuse	7.697	2.454	0.280	3.136	0.002	$\hat{y}$ =b17.924+ 7.697 $_{X1}$ + 6.310 $_{X2}$+ 4.680 $_{X3}$ +6.207 $_{X4}$
	Having current social problems	6.310	1.960	0.277	3.220	0.002	
	Ever exposed to physical abuse	4.680	2.035	0.201	2.30	0.023	
	Having board certificate	6.207	2.831	0.185	2.192	0.031	

4.6.2 Model (2) Predictors for Anxiety Symptoms

Four predictors namely (ever exposed to verbal abuse, Have you been diagnosed with depression, ever exposed to physical abuse and Ever exposed to harassment) were left over in the final model and the results in table (4.9) demonstrate that the ever exposed to verbal abuse has explained ΔR^2 15.6% of anxiety symptoms variation ,then by adding Have you been diagnosed with depression, the ΔR^2 reached 20.9% ,then by adding ever exposed to physical abuse, the ΔR^2 reached 23.9% and finally when Ever exposed to harassment added to model ,the ΔR^2 reached 27.3%.Indicating these four variables collectively have explained 27.3% of variation in anxiety symptoms and the R^2 change at each iteration was statistically significant.

Table 4.9
Model summary of four predictors for anxiety symptoms

Model	Predictors	R^2	Adjusted R^2	R^2 change	Sig F change
1	Ever exposed to verbal abuse	0.156	0.142	0.156	0.018
2	Have you been diagnosed with depression	0.215	0.209	0.059	0.006
3	Ever exposed to physical abuse	0.256	0.239	0.041	0.023
4	Ever exposed to harassment	0.293	0.273	0.037	0.032

In the same context to ascertain the prediction power of significant predictors to predict depressive symptoms among emergency physicians in Jordan, the results in table (4.10) showed the order of significant predictors as follows, being exposed to verbal abuse was found significantly associated with increase anxiety symptoms by (B=5.255,p=0.019) unit on average, Similarly been diagnosed with depression was found to be significantly associated with increase the anxiety symptoms by (B=6.633,p=0.006) unit on average higher than who have not been diagnosed with depression , Likewise those ever exposed to physical abuse are expected to increase anxiety symptoms by (B=4.203,p=0.025) unit on average than to never exposed to physical abuse and finally those ever exposed to harassment are expected to increase anxiety symptoms by (B=4.824,p=0.033) unit on average higher than to never exposed to harassment.

Table 4.10
Final model of stepwise multiple linear regression analysis for anxiety

Step 4	Predictors	B	SE	Beta	T value	Sig	Equation
Final model	Ever exposed to verbal abuse	5.255	2.209	0.213	2.379	0.019	$\hat{y}$ =b16.623+ 5.255 $_{X1}$ + 6.633 $_{X2}$+ 4.203 $_{X3}$ +4.824 $_{X4}$
	Have you been diagnosed with depression	6.633	2.373	0.239	2.795	0.006	
	Ever exposed to physical abuse	4.203	1.851	0.201	2.270	0.025	
	Ever exposed to harassment	4.824	2.235	0.192	2.158	0.033	

4.6.3 Model (3) Predictors for Stress Symptoms

Five predictors namely (ever exposed to harassment, having current social problems, ever exposed to verbal abuse, professional groups of consultant and having financial difficulties that affect your life and welling) were left over in the final model and the results in table (4.11) demonstrate

that the ever exposed to harassment has explained ΔR^2 20.6% of stress symptoms variation ,then by adding having current social problems, the ΔR^2 reached 28.3% ,then by adding ever exposed to verbal abuse, the ΔR^2 reached 33.4% and then by adding professional groups of consultant added to model ,the ΔR^2 reached 35.8%. and finally, when having financial difficulties variable added into model the Δ R2 reached 37.9%. Indicating these five variables collectively have explained 37.9% of variation in stress symptoms and the R^2 change at each iteration was statistically significant.

Table 4.11

Model summary of four predictors for stress symptoms

Model	Predictors	R^2	Adjusted R^2	R^2 change	Sig F change
1	Ever exposed to harassment	0.214	0.206	0.214	<.001
2	Having current social problems	0.297	0.283	0.083	<.001
3	Ever exposed to verbal abuse	0.353	0.334	0.056	0.004
4	Professional groups (Consultant)	0.382	0.358	0.030	0.029
5	Having financial difficulties that affect your life and welling	0.408	0.379	0.026	0.039

In the same context to ascertain the prediction power of significant predictors to predict stress symptoms among emergency physicians in Jordan, the results in table (4.12) showed the order of significant predictors as follows, those ever exposed to harassment are expected to increase stress symptoms by (B=8. 51, p<0.001) unit on average higher than to never exposed to harassment. Similarly, those having current social problems are expected to increase stress symptoms by (B=4.326, p=0.024) unit on average higher than those have not current social problems, furthermore being exposed to verbal abuse and having financial difficulties were found significantly associated with increase stress symptoms by (B=5.119, p=0.018) and (B=3.773, p=0.039) unit on average higher than who never exposed respectively.

On other hand the professional group was found to be inversely associated with stress symptoms indicating that the consultants have less stress symptoms than resident physicians (reference group) by (B= -0.534, p=0.012) unit on average.

Table 4.12
Final model of stepwise multiple linear regression analysis for stress

Step 4	Predictors	B	SE	Beta	T value	Sig	Equation
Final model	Ever exposed to harassment	8.510	2.239	0.324	3.801	<0.001	$\hat{y}$ =b17.733+ 8.510 $_{X1}$ + 4.326 $_{X2}$+ 5.119 $_{X3}$ - 0.534 $_{X4}$+3.773 $_{X5}$
	Having current social problems	4.326	1.888	0.202	2.291	0.024	
	Ever exposed to verbal abuse	5.119	2.127	0.198	2.406	0.018	
	Professional groups (Consultant)	-0.534	2.549	-0.201	-2.563	0.012	
	Having financial difficulties	3.773	1.800	0.177	2.096	0.039	

4.7 Chapter Summary

This study attempted to determine the extent of mental health problems among emergency physicians at Al-Bashir Hospital. The result showed that 32 (29.9%) and 27 (25.2%) of the physicians suffer from severe and moderate depression, respectively; similarly, 40 (37.3%) and 21 (19.6%) of the sample have severe and moderate anxiety, respectively; and 31 (29.0%) and 23 (21.5%) of the sample have severe and moderate stress conditions, respectively.

Certain demographic variables have been shown to contribute to the exacerbation of mental health problems. Verbal and physical abuse, current social problems and possession of a boarding certificate are positively related to the increase in depressive symptoms and explain 24.8% of the total variance. In addition, experiencing verbal and physical abuse, bullying and being diagnosed with depression were found to be positively correlated with anxiety symptoms, accounting for 27.3% of the total variance. In addition, social problems and financial difficulties were found to be positively correlated with stress symptoms, while being a counsellor was inversely correlated with 37.9% of the total variance explained.

CHAPTER FIVE
DISCUSSION

5.1 Introduction

Mental health care is an important public health issue worldwide, especially in developing countries. The aim of this study was to determine the extent of mental health problems among emergency physicians at Al-Bashir Hospital in Amman, Jordan's capital governorate.

Anxiety, depression and stress were found to be highly prevalent among study participants and associated with increased work stress, fatigue, poorer sleep quality and lower perceptions of social support among physicians at Al-Bashir Hospital. Physicians with anxiety, stress or depression experienced significantly more work stress and fatigue and lower quality of life than physicians without these conditions. Night shifts, on-call duties, lonely work, less free time and other factors all contribute to stress, anxiety and depression among physicians. Future research should focus on interventions that target organisational and occupational stress, fatigue, sleep quality, chronic pain and social support to reduce anxiety, depression and stress in Jordanian emergency physicians.

5.2 Stress, anxiety, and depression among physicians

The study was specifically designed to measure how many physicians suffer from stress, anxiety and depression. According to the studies, (Alhazmi et al., 2020; Alhifzi et al., 2018; Fang et al., 2020) being physicians can be stressful and lead to mental disorders such as despair and anxiety. Friedenberg et al. (2022) noted physicians and nurses are exposed to high levels of stress due to their responsibilities in various healthcare settings. Physiological, psychological and behavioural problems can develop if physicians continue to be exposed to such high levels of stress. As a result, medication errors may occur, patients may complain, sadness and anxiety may develop, and health care maybe compromised. Drastic measures need to be taken to prevent the development of stress among physicians.

It is almost always a stressful working environment when patients require emergency treatment or critical care. Urgent treatment of patients in an emergency department requires knowledge and skills, and patients need to be treated as quickly as possible. Compared to physicians in other specialties, physicians in the emergency department are exposed to other stressors, including lack of sleep, work overload, time pressure, working in a 24/7 work environment, life and death decisions have to be made, etc.

5.2.1 Anxiety Scale

In this study, which examined 107 emergency physicians at Al-Bashir Hospital, it was found that 40 (37.3%) suffered from severe anxiety and 21 (19.6%) from moderate anxiety. The findings are similar to those of Azizi et al. (2021), who studied 7626 physicians with moderate levels of physical and psychological anxiety. Anxiety symptoms were found in 47.9% of the physicians surveyed. A larger percentage of physicians and nurses working in the emergency department reported experiencing anxiety symptoms (n = 14,825) (Song et al., 2020). Kene et al. (2018) found that only 19% of staff participated in the survey. In a cross-sectional study conducted by Zehra et al. (2022) in accident and emergency departments of different teaching hospitals in Karachi, 260 resident physicians found that the prevalence of anxiety in the hospitals ranged from normal (38.1%) to mild (35.0%), moderate (16.9%) and severe (10.0%). There is a need for psychological support programs to reduce the anxiety level of healthcare professionals and create a healthy work environment. More than half of the residents had mild to severe anxiety disorders.

5.2.2 Depression Scale

Another significant finding of this study among emergency physicians was that 32 (29.9%) of them were suffering from severe depression while 27 (25.2%) were suffering from moderate depression. The results of this study were lower than those of other studies. According to a study conducted by Chen et al. (2022) in China, about one third of emergency physicians suffered from depression. In addition, a study conducted in Turkey by Caliskan and Dost (2020) for the evaluation of knowledge, attitudes, depression and anxiety among emergency physicians found that (62%) of physicians had significant depression, compared to 57.1% by Lu et al. (2015). This research highlights the fact that depression among emergency physicians is a global problem. Therefore, it is crucial to recognize the causes and the need for psychological care in order to protect the mental health of emergency physicians.

5.2.3 Stress scale

The Emergency Department provides clinical services 24 hours a day, seven days a week. Rapid clinical assessments and decisions are required to help each sick patient in a timely manner. At the same time, patients who need to be treated in the ICU are often treated in the department due to access problems. Historically, emergency physicians have higher occupational stress than other medical specialties. According to the study, more than 29.0% of emergency physicians have experienced burnout during their career. Approximately (21.5%) of emergency physicians. The physicians stated that they sometimes find it difficult to

calm down, that they overreact to circumstances and that they expend a lot of anxious energy. A similar result was found in a study conducted by Abdul-Samed GHANA. Ahmad's investigation yielded similar results. Abraham discovered symptoms of stress in 67% of the physicians surveyed in an Australasian study on morale, stress and coping strategies of emergency room staff.

5.3 Physicians' Stress, Anxiety, And Depression Factors

Workload has been shown to be a major factor in stress, anxiety and depression among emergency physicians. This means that Physicians with a high workload are more likely to suffer from stress, anxiety and depression than Physicians with a lower workload. In this study, the Physicians who made up the majority of the respondents cited workload as the main cause of stress, anxiety and depression. This is because emergency physicians generally face a huge workload every day, which could be due to the low doctor-to-patient ratio in Jordan. In addition, night shifts and on-call duties, solo working, less free time outside work and other factors place a significant burden on physicians, leading to the development of stress, anxiety and depression.

In this facility-based cross-sectional study, emergency department staff at AL Bashir Hospital were assessed for depression, anxiety and stress. Based on the DASS-21 scale, we found that 60.2%, 50.4 %and 13% of the medical staff had stress, anxiety and depression respectively. 8.3%of physicians suffer from severe or extremely severe depression. 9.4 per cent and 13.8 per cent showed severe anxiety and 2.4 per cent and 2.4 per cent showed extreme stress. Among emergency room physicians, mental morbidity is significant.

In their multinational study of 906 health workers during the pandemic COVID -19 to assess mental morbidity, Chew et al, using the same DASS-21 scale, reported a prevalence of 5.3, 8.7 and 3.8 per cent of very severe depression, very severe anxiety and very severe stress, respectively. A study of 350 health professionals using the GAD -7 scale found that 3.7 per cent, 11.4 per cent and 17.7 per cent suffered from stress, depression and anxiety, respectively. One thousand three hundred and thirty-three nurses in emergency departments during the pandemic COVID -19 were surveyed by A Ying et al. using a nine-item patient health questionnaire [12]. Using the Hospital and Anxiety Scale (HADS), Gupta Simmi et al. found that 28.2 per cent of the 769 force physicians at COVID -19 suffered from depression and anxiety. Our conclusions are supported by more recent research. As result, health and allied personnel may suffer significant psychological harm as a result of fighting the epidemic. Mental morbidity, which affects nearly one-tenth of the population, requires immediate treatment, which may include counselling or medication.

Recommendations

The development of mental health disorders prevention and treatment programs, policies and procedures for emergency physicians based on the findings of the study could be informative and useful for public and private hospitals.

There is an urgent need for improving physicians' skills in coping with the stress of working the emergency department.

Conducting comparative studies between different hospitals in Jordan

There is also a need for future research in interventions to reduce stress, anxiety and depression amongst healthcare professionals particularly those working the emergency department. Finally, these should be an investment in awareness and early detection programs to support early presentations of physicians with potential mental health problems.

Conclusion

This study has revealed that the prevalence of stress, anxiety and depression is high among physicians at the emergency departments in Jordan. Further research and intervention programs are needed to reduce the levels of these mental health disorders, supporting staff's ability of coping with stress, and in supporting surveillance and early detection of these problems.

Limitations

This study has a number of limitations. The study was limited by the fact that random sampling was not conducted to obtain a nationally representative sample. As all participants (100%) were emergency physicians from Al Bashir Hospital. This could affect the generalisability of the results. Considering the fact, the resident rotate between hospitals could reduce the effect of this point.

Another limitation of this study is that no comparison group was available to determine whether symptoms increased in Jordan's largest hospital compared to another hospital with a lower burden and to conduct a comparison between physicians working at the emergency department and other units.

Despite these limitations, this study is the first to examine the mental health of Jordanian health workers at the emergency department in Al Bashir Hospital, and particularly post COVID-19, and the results will provide a basis for future and intervention programs

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APPENDICES

APPENDIX I
English Questionnaires

Survey Questionnaire

Prevalence of depression, anxiety and stress symptoms among Emergency physicians at Al-Bashir Hospital, Jordan

Dear Participants.
My name is **Daher Al-Tarawneh**

I invite you to participate in this study by completing the following questionnaires. The aim of this study is to determine the prevalence of depression, anxiety and stress in the emergency department. Completing the following questionnaire will take approximately 3-7 minutes. Thank you for taking the time to participate in this study. You are not obliged to answer the questions. However, please make every effort to help with the study. Please hand in the questionnaire to the secretariat. The data collected will be treated confidentially and used exclusively for this study.

For any enquiries, you can contact the researcher on ( )

Best regards,
Daher Al-Tarawneh
Department of Public Health
Faculty of Medicin**e**
Mutah University

Questionnaires

Q1	Gender	Male				Female
Q2	Age in Years					
Q3	Marital status	single	Married	Engaged	Divorced	Widowed
Q4	Number of dependents (number of family members)					
Q5	Educational Level	Bachelor Degree	Master	Jordanian Board	Arabic Board	Other, please specify
Q6	Residency training in:	Jordan	Outside Jordan, please specify country			
Q7	Nationality	Jordanian	Others			
Basic Characteristics						
Q8	Professional Group	General practitioner	Resident	Specialist	Consultant	
Q9	Specialty	General medicine	Emergency medicine	Pediatric	Surgery	
		orthopedic	Ophthalmic		Others	
Q10	Years of work experience (in years) since completion of internship year (Imtyaz)					
Q11	Family Income Level	**<1000**	1000 - 2000	2000-3000	>3000	
Q12	Work load per week in hours	Number in hours ……. (For example, 5 shifts of 8 hours mean 40 hours)				
Q13	Are you working night shifts?	All the time Most of the time Some of the time Little of the time Not at all				

Q14	Are you working on weekends?	All the time Most of the time Some of the time Little of the time Not at all			
Q15	Are you working on night/weekend call duties in addition to your daily work?	All the time Most of the time Some of the time Little of the time Not at all			
Q16	With whom do you live?	alone	With Friend	With family	With colleagues
Q17	Have you visited any doctors or clinic recently??	YES			NO
Q18	Do you have any medical illness?	YES, Define			NO
Q19	Do you have any psychological disease?	YES, Define			NO
Q20	Do you take any type of medication?	YES			NO
Q21	Are you smoker?	YES			NO
Q22	Do you exercise regularly?	YES, Frequency: Number of minutes per week for mild exercise (you can talk and sing) number of minutes per week for moderate exercise (You can talk but not sing) Number of minutes per week for vigorous exercise (you will not be able to say more than a few words without pausing for a breath)			NO

Q23	Do you expose to any Verbal abuse at your work?	All the time Most of the time Some of the time Little of the time Not at all
Q24	Do you expose to any physical abuse at your work?	All the time Most of the time Some of the time Little of the time Not at all
Q25	Do you expose to threatening at your work?	All the time Most of the time Some of the time Little of the time Not at all
Q26	How much do you sleep daily on average?	……..hours

Q27	Have you received psychological counselling	YES. when was the last session	NO
Q28	Have you participated in a psychosocial support program	YES, when was the last event/session	NO
Q29	If not, have you received any offer for such support?	YES	NO
Q30	Have you suffered from traumatic events after your diagnosis irrelevant to your medical condition?	YES	NO
Q31	Have you been diagnosed with depression, if yes please specify	Duration	Never
Q32	Treatment for depression	Currently	previously

Q33	Have you been diagnosed with anxiety, if yes please specify	Condition:	Duration	Never
Q34	Any current social problems causing major stress to your life	YES	NO	
Q35	Do you have any financial difficulties that affect your life and welling	YES		NO
Q36	**<u>Medical Conditions:</u>**			
Q36.1	Arthritis	Yes, duration		NO
		≤6months	>6months	
Q36.2	Diabetes	Yes, duration		NO
		≤6months	>6months	
Q36.3	Migraine	Yes, duration		NO
		≤6months	>6months	
Q36.4	Heart problems	Yes, duration		NO
		≤6months	>6months	
Q36.5	High blood pressure	Yes, duration		NO
		≤6months	>6months	
Q36.6	Low back pain	Yes, duration		NO
		≤6months	>6months	
Q36.7	Other chronic diseases:			
<u>Q37. Medication's history:</u>				
Q37.1	Current medications with duration			

38. For females:					
Q38.1	Parity (Complete+Abortions)	P …….+……..			
Q38.2	Have you reached the menopause?	YES Age at menopause…..			NO
39.Smoking:					
Q39.1	Are you a	Current smoker	Ex-smoker	never	
Q39.2	Number of cigarettes				
Q39.3	Duration in Years /Month				
Q39.4	Waterpipe Sheesha	Yes	No	If yes, number per week	
40. Psychosocial Support Program					
Q40.1	Have you heard of any psychosocial support program for physicians in Jordan	Yes	No	If yes, have you participated	
				Yes	No
Q40.2	This was at	My hospital,	At the MOH,	Medical Association,	Other bodies Please specify
Q40.3	Have you heard of any psychosocial support program for emergency physicians in Jordan	Yes	No	If yes, have you participated	
				Yes	No
Q40.4	This was at	My hospital,	At the MOH,	Medical Association,	Other bodies Please specify

DASS-21

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.
The rating scale is as follows:
0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

1	I found it hard to wind down	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5	I found it difficult to work up the initiative to do things	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I experienced trembling (e.g., in the hands)	0	1	2	3
8	I felt that I was using a lot of nervous energy	0	1	2	3
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting agitated	0	1	2	3
12	I found it difficult to relax	0	1	2	3
13	I felt down-hearted and blue	0	1	2	3
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15	I felt I was close to panic	0	1	2	3
16	I was unable to become enthusiastic about anything	0	1	2	3
17	I felt I wasn't worth much as a person	0	1	2	3
18	I felt that I was rather touchy	0	1	2	3
19	I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)	0	1	2	3
2 0	I felt scared without any good reason	0	1	2	3
21	I felt that life was meaningless	0	1	2	3

المعلومات الشخصية

الاسم: ظاهر خالد حماد الطراونة

التخصص: ماجستير إدارة الصحة العامة

الكلية: الطب

سنة التخرج: 2023