

The Impact of Workload on Mental Health Among Healthcare Workers in Saudi Arabia

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ABSTRACT

This study investigates the impact of workload on mental health among healthcare workers in Saudi Arabia. A cross-sectional survey was conducted with 296 healthcare professionals, including nurses, doctors, technicians, pharmacists, and administrative staff. The study employed a descriptive method and a questionnaire as the primary data collection tool. The questionnaire was validated through face validity and internal consistency, with Cronbach's alpha coefficients ranging from 0.890 to 0.956.

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The study examined three factors: workload factors, job engagement, and emotional well-being. Results showed that participants generally agreed with the manageability of their workload (80.11%) and reported high levels of job engagement (71.40%). However, emotional well-being received a neutral opinion (77.42%). The study found a negative moderate significant relationship between workload factors and mental health ($r=-0.503$), a positive strong significant relationship between job engagement and mental health ($r=0.650$), and a negative moderate significant relationship between emotional well-being and mental health ($r=-0.545$). The findings emphasize the importance of supportive organizational practices, such as fair workload distribution, professional growth opportunities, and open communication about mental health, in enhancing the well-being and job satisfaction of healthcare workers. The study recommends strengthening support networks, promoting open communication on mental health, adjusting workload and scheduling, providing opportunities for professional development, improving access to mental health resources, and encouraging work-life balance to foster a healthier work environment for healthcare professionals in Saudi Arabia.

KEYWORDS: healthcare workers, Saudi Arabia, mental health, workload

1. Introduction

Mental health is a multifaceted concept that encompasses emotional, psychological, and social well-being. It influences how individuals think, feel, and act, and it plays a crucial role in determining how they handle stress, relate to others, and make choices. According to a comprehensive analysis of scientific literature, mental health is not merely the absence of mental disorders but involves a state of well-being where individuals realize their potential, can cope with the normal stresses of life, work productively, and contribute to their communities (Alcântara et al., 2022).

Research indicates that mental health is influenced by various factors including biological, environmental, and social elements. The World Health Organization (WHO) emphasizes that mental health is integral to overall health and should be considered in the context of public health policies and practices (Kovačević, 2023). Moreover, the evolving understanding of mental health has led to its recognition as a cross-cutting theme across multiple disciplines, reflecting its complexity and the need for interdisciplinary approaches to address mental health issues effectively (Espinoso-Pinos et al., 2023).

There are numerous causes of poor mental health in health-care workplace settings. These causes include an excessive workload (Anderson et al., 2017; Shanafelt et al., 2016), inadequate autonomy (Eckleberry-Hunt et al., 2016; Enns et al., 2015), working in emotionally charged settings (Adriaenssens et al., 2015), the culture of the health professions (Wallace et al., 2009), workplace violence (Yang et al., 2018), unintended medical blunders (Robertson & Long, 2018), and patient complaints (Bourne et al., 2015). A qualitative study of well-being, stress, and burnout among health care workers discovered that factors influencing well-being include both work-related factors (workload, role ambiguity, job security, relationship with

service users, and physical work environment) and individual factors (gender, weak personality, and educational level) (Selamu et al., 2017).

Workload is one of the most identified elements in studies on the mental health of health care workers. Heavy workload has been proven to be a substantial predictor of burnout, stress, and role conflict among health professionals. The Model Requirements-Work Control considers workload to be the most important work-related stress factor. The workload is defined as a person's view of the job needs in terms of the amount of work, the time available to do the work, and the speed with which the task must be completed (Demerouti et al., 2001). Employees in one health care environment perform a variety of tasks to support patient care, and they frequently report a hard burden due to a lack of staff and time constraints (Roelen et al., 2018).

Healthcare workers (HCWs) face significant workload challenges that have been exacerbated by recent global health crises, particularly the COVID-19 pandemic. The literature highlights several dimensions of this workload, including physical demands, mental health implications, and the impact of workplace conditions.

HCWs often work under intense pressure, which can lead to physical exhaustion and emotional distress. Studies indicate that during the COVID-19 pandemic, many HCWs reported increased workloads due to understaffing and a surge in patient numbers. This situation has resulted in heightened levels of stress, anxiety, and burnout among healthcare professionals (Silva-Junior & Fischer, 2024). For instance, a qualitative study in Ontario revealed that HCWs felt abandoned by their governments amid insufficient protective measures and overwhelming patient care demands (Brophy et al., 2020).

The mental health of HCWs has emerged as a critical concern. Research shows that the relentless nature of their work during the pandemic contributed to severe mental health issues, including anxiety and depression. Factors such as high workloads, inadequate resources (like personal protective equipment), and insufficient organizational support have compounded these issues. A study indicated that the psychological stress experienced by frontline workers necessitates targeted intervention programs to mitigate these effects (Belingheri et al., 2020).

Another aspect of the workload is the risk of workplace violence, which has been reported to be prevalent among HCWs, particularly in high-stress environments like emergency departments. A scoping review found that violence against healthcare workers is a significant issue, particularly in psychiatric settings, further complicating their workload and mental health challenges (Civillotti et al., 2021).

Study problem

Providing 24-hour services is a mandatory component of the healthcare system, which has resulted in the rise of the shift work phenomena (Moreno & Louzada, 2004). Shift work is a continuous or non-continuous rotational schedule during the day or week that includes anything done outside of the hours of 7 a.m. to 6 p.m (Esquirol et al., 2011). In developed countries, approximately 20% of the workforce works in shifts, with one-third working night shifts (Rouch et al., 2005). Shift work is one of the most significant issues confronting the health-care system, and nurses,

Turki Saad Mohammed Alharbi, Abdullah Hamad Alhaqbani, Amal Ahmed Ismaili Bahkali, Bader Mohammed Hamed Almutairi, Jana Mohammed Altharawi, Fahd Abdullah Alqahtani, Adel Alhumaidi W Alsharari, Dalal Salem Alanazi, Abdulrahman Ali Al-Shahri, Badr Abdullah Melfi Aldosari, Fatima Abdullah Alqufaidi, Saud Mashal Alanazi, Majed Rzaq Alenazi, Mane Mohammed M Alamery, Obaid Saleh Samran Almutairi as the primary power behind it, face numerous complications as a result of work shifts (Ruiz-Fernández et al., 2020; Saksvik-Lehouillier et al., 2013).

Long and irregular working hours, a lack of personnel, and work shifts all contributed to an increase in workplace accidents and human errors, as well as anxiety, sleep difficulties, increased smoking, impaired immune function, digestive issues, cardiovascular disease, and musculoskeletal concerns (Carayon & Gürses, 2005). A nurse's workload is characterized by the number of patients, working setting and facilities, and performance in providing services (Aiken et al., 2018; Ulrich et al., 2019), which includes both qualitative and quantitative workloads. The quantitative workload refers to a situation in which people are forced to accomplish more tasks than they can handle. A sudden rise in workload can have serious physical and mental effects for nurses (Dall'Ora et al., 2020). Job stress is regarded as one of the most serious repercussions of extended working hours and work overload among nurses (d'Ettorre et al., 2020). It is defined as a bad mental condition resulting from workplace strain (Bardhan et al., 2019). Job stress is defined by the National Institute for Occupational Safety and Health (NIOSH) as a lack of harmony between job needs and abilities, capacities and desires (van der Wal et al., 2018). As a result, job stress is related with an imbalance between a person's capacity and job responsibilities (Clough et al., 2017; Järvelin-Pasanen et al., 2018).

According to research, one of the most prominent causes of occupational stress is workload, which endangers nurses' physical and mental health (Dall'Ora et al., 2020; Jasiński et al., 2021). In this context, Shaw et al. discovered that the qualitative workload could raise stress, anxiety, and depression; however, this relationship was not significant (Shaw & Weekley, 1985). According to Angermeyer et al., nurses are constantly stressed and experiencing psychological impairment as a result of their workload and shift work (Angermeyer et al., 2006). Numerous stressors can contribute to job stress in nurses, including work overload, a lack of manpower, limited freedom of action, patient death, sleep disturbance, long working hours and patient suffering, physical injuries such as cardiovascular, gastrointestinal, and musculoskeletal disorders, and individual and family problems (Books et al., 2017; Ribet & Derriennic, 1999; Saksvik-Lehouillier et al., 2013).

On the other side, it can be argued that shift workers' difficulties are due to job stress. Previous research has shown that job-related stress might impair nurses' performance (Khamisa et al., 2015; Rasool et al., 2020). As a result, the conceptual model of this study is consistent with the importance of shift problems for nurses' physical and mental health, given that job stress might operate as a mediator between shift work and its complications. Until far, few research has investigated the role of stress as a mediator in shift work and associated repercussions.

Therefore, the present study aimed to design and present a conceptual model on the effects of workload on mental health among healthcare workers in Saudi Arabia.

Research Questions

- What is the reality of workload among healthcare workers in Saudi Arabia?

- What is the workload on mental health among healthcare workers in Saudi Arabia?

Research Objectives

- To identify the reality of workload among healthcare workers in Saudi Arabia.
- To identify the workload on mental health among healthcare workers in Saudi Arabia.

Research Hypotheses

- There are statistically significant differences in the responses of the study sample regarding the impact of (Workload Factors) of workload on the mental health among healthcare workers in Saudi Arabia.
- There are statistically significant differences in the responses of the study sample regarding the impact of (Job Engagement) of workload on the mental health among healthcare workers in Saudi Arabia.
- There are statistically significant differences in the responses of the study sample regarding the impact of (Emotional Well-being) of workload on the mental health among healthcare workers in Saudi Arabia.

2. Literature review

A study by titled Amriy investigates the influence of high workload and burnout on healthcare workers' performance and patient outcomes in Saudi Arabia. Conducted as a cross-sectional survey with 200 healthcare professionals, it examines the role of job control as a moderating factor. Findings indicate that 48% of participants report high workload impacts, with significant associations between heavy workloads and adverse patient outcomes, including increased medication errors, patient falls, and urinary tract infections. The study concludes that improving job control could mitigate burnout and suggests that management practices supporting job resources and workload control are essential to reduce stress and enhance healthcare quality (Amriy et al., 2022).

A study by Saedpanah uses structural equation modelling to explore how workload and job stress impact physical health, mental health, sleep quality, and individual and family life of nurses. Conducted on 300 nurses in Tehran, the study finds that high workloads directly and indirectly lead to health complications, sleep disorders, and personal issues, with job stress acting as a significant mediator. Results reveal strong associations: workload increases job stress, which then exacerbates physical and mental health problems, reduces sleep quality, and contributes to personal and familial disruptions. This study highlights the need for interventions to manage workload and stress to improve nurses' overall well-being and healthcare quality (Saedpanah et al., 2022).

A study by Portoghese examines the moderating effects of job control on the relationship between workload and burnout symptoms, specifically exhaustion and

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cynicism, among 352 healthcare workers in Italian hospitals. Using structural equation modelling, the study reveals that increased workload significantly predicts higher levels of exhaustion, which in turn leads to cynicism, while job control acts as a buffering factor, mitigating the impact of workload on exhaustion. Findings support the importance of organizational interventions, such as increasing job control, to prevent burnout and improve (Portoghese et al., 2014).

A study by Bondagji investigates the impact of extended working hours on anxiety and depression among resident physicians in Makkah, Saudi Arabia. Using a cross-sectional survey of 258 residents, it found that 39.5% experienced anxiety, while 20.9% reported depression. Multivariate analysis revealed that working more than 64 hours per week significantly increased anxiety risk (OR=2.91) compared to a 40-hour workweek, with similar patterns observed for depression across working hours exceeding 40 hours. Additional stressors, such as lack of sleep and exposure to workplace injustice, further amplified these mental health risks. The study underscores the need for policy interventions to manage working hours and support mental health among physicians (Bondagji et al., 2022).

A study by Rostami examines the relationship between mental workload, job satisfaction, and the moderating role of job control among healthcare workers in Iran. Data from 480 participants, including nurses, midwives, and administrative staff, revealed that nurses and midwives experience significantly higher mental workloads than administrative staff, correlating with lower job satisfaction. Job control was found to mitigate the negative impact of workload on job satisfaction, suggesting that greater control over tasks can buffer against stress and improve satisfaction levels. The findings highlight the need for management interventions to reduce workload and enhance job control, potentially improving healthcare workers' overall job satisfaction and performance (Rostami et al., 2021).

3. Methodology:

Given the nature of the current study topic (The impact of workload on mental health among healthcare workers in Saudi Arabia). To achieve the study objectives, the researcher used the descriptive method, which is: the type of research by which all members of the research community or a large sample of it are questioned; with the aim of describing the phenomenon being studied in terms of its nature and degree of existence. (Al-Assaf, 2016, p. 211).

Study Community:

The current study community consists of healthcare workers in Saudi Arabia.

Study Sample:

The origin of scientific research is to be conducted on all members of the research community; because this is more likely to confirm the results, but the researcher resorts to choosing a sample of them if this is not possible due to their large number, for example" (Al-Assaf, 2003, p. 96); therefore, the researcher chose a random sample, where the sample amounted to (296) of healthcare workers in Saudi Arabia

Study Tool:

Based on the nature of the data and the methodology followed in the study, the researcher found that the most appropriate tool to achieve the objectives of this study is (the questionnaire). The study tool was built by referring to the literature and previous studies related to the subject of the study, The impact of workload on mental health among healthcare workers in Saudi Arabia. The researcher designed the initial questionnaire and distributed it to the study sample to find out the data that this tool seeks to collect. The validity and reliability procedures for this tool were verified. The following is a detailed explanation of how to prepare the tool and the procedures taken by the researcher to verify the validity and reliability of the tool.

Validation of questionnaire

The validity of the study tool means ensuring that it measures what it was prepared to measure. It also means that the questionnaire includes all the elements that enter the analysis on the one hand, and the clarity of its expressions on the other hand, so that it is understandable to everyone who uses it. The researcher verified the validity of the study tool through:

Honesty of arbitrators:

The face validity method was used, with the aim of ensuring the validity of the questionnaire and its suitability for research purposes, by presenting it to a group of academic and specialist arbitrators, and asking them to express an opinion regarding the extent of the validity and validity of each paragraph of the questionnaire and its suitability for measuring what it was designed to measure, and introducing Necessary amendments, whether by deletion, addition or reformulation. The arbitrators presented suggested amendments to the study tool, and the researcher took those observations into account, made the necessary amendments that were agreed upon by most arbitrators, and then relied on the questionnaire in its final form.

Internal consistency validity

Through internal consistency, we know the extent to which each paragraph of the questionnaire is consistent with the axis/dimension to which this paragraph belongs. To calculate the validity of the internal consistency of the study tool, the Pearson correlation coefficient was calculated (Pearson Correlation Coefficient), through which the correlation coefficients were calculated between the score of each item and the total score of the dimension (the average score of the items of the dimension) to which the item belongs. The following tables show the validity of the internal consistency.

Table (1): internal consistency results

N = 296		Pearson Correlation Coefficient	Sig
Workload Factors			
1-	I often feel overwhelmed by the number of tasks I must complete.	.802**	.000
2-	I have sufficient time to complete my work tasks.	.563**	.000
3-	My workload has increased significantly during the COVID-	.779**	.000

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19 pandemic.			
4-	I receive adequate support from my colleagues when managing my workload.	.774**	.000
5-	I often work beyond my scheduled hours to finish my tasks.	.870**	.000
6-	The demands of my job interfere with my personal life.	.787**	.000
7-	I feel that my workload is manageable.	.716**	.000
8-	I have access to resources that help me manage my workload effectively.	.741**	.000
9-	I frequently experience stress due to high workloads.	.785**	.000
Job Engagement			
1-	I am satisfied with the amount of work I am assigned.	.633**	.000
2-	I feel recognized for my efforts in managing my workload.	.575**	.000
3-	My job provides me with opportunities for professional growth despite high workloads.	.804**	.000
4-	I feel that my work-life balance is affected by my job demands.	.827**	.000
5-	I am satisfied with the communication regarding workload expectations from management.	.827**	.000
6-	My workplace culture supports open discussions about workload challenges.	.885**	.000
7-	I believe that the current workload is fair compared to other healthcare workers in similar roles.	.784**	.000
8-	I receive constructive feedback regarding my performance and workload management.	.833**	.000
Emotional Well-being			
1-	I often feel fatigued after completing my work shifts.	.852**	.000
2-	My job responsibilities contribute to feelings of anxiety or stress.	.894**	.000
3-	I find it difficult to concentrate due to work-related stressors.	.819**	.000
4-	The nature of my work leads to physical exhaustion at the end of the day.	.872**	
5-	I believe that high workloads negatively affect my mental health.	.728**	.000
Mental Health for Healthcare Workers			
1-	I feel overwhelmed by my workload.	.782**	.000
2-	I often feel anxious about my job performance.	.729**	.000
3-	I have difficulty sleeping due to work-related stress.	.833**	.000
4-	I feel supported by my colleagues in managing stress.	.683**	.000
5-	I often experience feelings of sadness or hopelessness.	.799**	.000
6-	I find it hard to maintain a work-life balance.	.856**	.000
7-	I feel confident in my ability to cope with work-related challenges.	.821**	.000
8-	I have access to mental health resources if needed.	.623**	.000
9-	I frequently feel fatigued or exhausted after work.	.886**	.000
10-	I believe that my mental health is prioritized by my employer.	.791**	.000
11-	I often reflect on my emotional well-being at work.	.816**	.000
12-	I feel that I can talk openly about mental health issues with my supervisor.	.858**	.000
13-	I feel comfortable seeking help for my mental health concerns.	.832**	.000

It is clear from the previous table that the Pearson correlation coefficient values for each item for each dimension with the total score of the dimensions; Positive and statistically significant at the significance level (0.01), where the values of the

correlation coefficients ranged from (0.563) as a minimum to (0.894) as a maximum. This indicates the presence of internal consistency in the items of each dimension, and their suitability for measuring what they were designed to measure.

Reliability of the questionnaire

Reliability of the questionnaire means that it gives approximately the same results if it is applied repeatedly to the same people in similar circumstances. The reliability of the questionnaire was calculated using Cronbach's Alpha, it was equal to 0.731. This means that the study tool has a high degree of stability and can be relied upon in the field application of the study. It is also an important indicator that the items that make up the questionnaire give stable and stable results if it is re-applied to the study sample members again. Therefore, there is reassurance regarding the analysis of the study data.

For each factor, it had 5 Likert-type items, this factor was pretested and checked for internal consistency. Accordingly, all the items were found to qualify internal consistencies table 2 shows the values of Cronbach's Alpha coefficient (α) of each factor. Likert-type items had five response anchors: (from 1- 'Strongly Disagree' to 5- 'Strongly agree').

Table (2): Reliability of the questionnaire

Factors	Number of Items	Cronbach's Alpha
Workload Factors	9	.904
Job Engagement	8	.905
Emotional Well-being	5	.890
Mental Health for Healthcare Workers	13	.956
Total questionnaire	35	0.731

It is clear from above table in Cronbach's Alpha coefficient (α) of each factors is very high where it ranged from 0. 890to 0.956

Study implementation procedures:

The questionnaire was sent to Paramedics in the Saudi Red Crescent Authority in the Makkah Region, where the researcher converted the questionnaire to electronic in order to collect the largest possible amount of the study sample, where the researcher distributed the questionnaire and after examining it, the researcher obtained (296) questionnaires valid for statistical analysis, after which the data was entered and processed statistically by computer using the (SPSS) program, and then the researcher analyzed the data and extracted the results.

Statistical processing methods:

To achieve the objectives of the study and analyze the data that was collected, many appropriate statistical methods were used using the Statistical Package for Social Sciences program, abbreviated as (SPSS28), after the data was coded and entered into the computer.

To determine the length of the cells of the quadrilateral scale (lower and upper

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4. Results

Table (3): Characteristics of the study participants (n=296)

Demographic		Frequency	Percent
Gender	Male	137	46.3
	Female	159	53.7
Educational Level	diploma	64	21.6
	Bachelor's Degree	155	52.5
	Postgraduate Studies (Master's - PhD)	77	25.9
Job Title	Doctor	60	20.1
	Nurses	101	34.0
	Administrative	36	12.3
	Pharmacists	49	16.7
	Technician	50	17.0
Years of Experience	Less than 3 years	73	24.7
	4-10 years	109	37.0
	11-15 years	55	18.5
	More than 15 years	59	19.8

The study included 296 individuals. Of these, 21.6% had a diploma degree, 52.5% had a bachelor’s degree, and 25.9% had a master’s or PhD degree. In terms of job title, 34.0% were nurses, 20.1% were doctors, 17.0% were technicians, 16.7% were pharmacists, and 12.3% were administrative staff. Regarding years of experience, 24.7% had less than 3 years of experience, 37.0% had 4-10 years, 18.5% had 11-15 years, and 19.8% had more than 15 years of experience. (Table 3).

The workload Among healthcare workers in Saudi Arabia

For factor 1: Workload Factors, the researcher calculated the mean, standard deviation, relative weight, level of agreement, and ranking for each item. Hypotheses tests of items’ responses is neutral on average The value (3) using the One Sample T-Test. Table (4) shows the results.

Table (4): Workload Factors

N = 296	Mean	Standard deviation	Relative weight	T-value	Sig	Agreement degree	Rank
1- I often feel overwhelmed by the number of tasks I must complete.	4.41	0.91	88.14	23.85	.000	Strongly agree	3
2- I have sufficient time to complete my work tasks.	4.73	0.69	94.58	38.71	.000	Strongly agree	1
3- My workload has increased significantly during the COVID-19 pandemic.	4.15	1.21	83.05	14.67	.000	agree	4
4- I receive adequate support from my colleagues when managing my workload.	3.88	1.24	77.63	10.93	.000	agree	6
5- I often work beyond my scheduled hours to finish my tasks.	4.08	1.24	81.69	13.42	.000	agree	5
6- The demands of my job interfere with my personal life.	3.64	1.33	72.88	7.45	.000	agree	7
7- I feel that my workload is manageable.	4.42	1.08	88.47	20.27	.000	Strongly agree	2
8- I have access to resources that help me manage my workload effectively.	3.14	1.46	62.71	1.43	.154	neutral	9
9- I frequently experience stress due to high workloads.	3.59	1.41	71.86	6.48	.000	agree	8
Mean of factor 1	4.01	0.90	80.11	17.17	.000	agree	

The average of the sample members' answers to the "Workload Factors" dimension was (4.01 out of 5) with a relative weight of 80.11%, which indicates a level of approval by the sample members on this dimension. The highest item received the highest degree of approval from the sample members was: The paragraph that states, "I have sufficient time to complete my work tasks." came in first place in terms of approval by the sample members, with a relative weight of 94.58%.

While the item that received the lowest degree of support from the sample members was: The paragraph that states, "I have access to resources that help me manage my workload effectively." ranked next to last in terms of approval by the sample members, with a relative weight of 62.71%.

For factor 2: Job Engagement, the researcher calculated the mean, standard deviation, relative weight, level of agreement, and ranking for each item. Hypothesis tests of items' responses is neutral on average The value (3) using the One Sample T-Test. Table (5) shows the results.

Table (5): Job Engagement

N = 296	Mean	Standard deviation	Relative weight	T-value	Sig	Agreement degree	Rank
1- I am satisfied with the amount of work I am assigned.	3.95	0.97	78.98	15.09	.000	agree	1
2- I feel recognized for my efforts in managing my workload.	3.93	1.03	78.64	13.97	.000	agree	2
3- My job provides me with opportunities for professional growth despite high workloads.	3.93	1.03	78.64	13.97	.000	agree	3
4- I feel that my work-life balance is affected by my job demands.	2.76	1.26	55.25	-2.90	.004	neutral	8
5- I am satisfied with the communication regarding workload expectations from management.	3.63	1.17	72.54	8.27	.000	agree	5
6- My workplace culture supports open discussions about workload challenges.	3.22	1.31	64.41	2.59	.010	neutral	7
7- I believe that the current workload is fair compared to other healthcare workers in similar roles.	3.73	1.15	74.58	9.74	.000	agree	4
8- I receive constructive feedback regarding my performance and workload management.	3.41	1.31	68.14	4.78	.000	agree	6
Mean of factor 2	3.57	0.90	71.40	9.77	.000	agree	

The average of the sample members' answers to the "Job Engagement" was (3.57 out of 5) with a relative weight of 71.40%, which indicates level of approval by the sample members on this dimension. The highest item received the highest degree of approval from the sample members was the paragraph that states, "I am satisfied with the amount of work I am assigned." came in first place in terms of approval by the sample members, with a relative weight of 78.98%.

While the item that received the lowest degree of support from the sample members was the paragraph that states, "I feel that my work-life balance is affected by my job demands." ranked next to last in terms of approval by the sample members, with a relative weight of 55.25%.

For factor3: Emotional Well-being, the researcher calculated the mean, standard deviation, relative weight, level of agreement, and ranking for each item. Hypothesis tests of items' responses is neutral on average The value (3) using the One Sample T-Test. Table (6) shows the results.

Table (6): Emotional Well-being

N = 296	Mean	Standard deviation	Relative weight	T-value	Sig	Agreement degree	Rank
1- I often feel fatigued after completing my work shifts.	2.68	1.49	53.56	-3.32	.001	neutral	4
2- My job responsibilities contribute to feelings of anxiety or stress.	2.76	1.42	55.25	-2.57	.011	neutral	3
3- I find it difficult to concentrate due to work-related stressors.	3.17	1.44	63.39	1.81	.072	neutral	2
4- The nature of my work leads to physical exhaustion at the end of the day.	2.31	1.41	46.10	-7.58	.000	neutral	5
5- I believe that high workloads negatively affect my mental health.	3.19	1.37	63.73	2.08	.038	neutral	1
Mean of factor 3	2.82	1.19	56.41	-2.32	.021	neutral	

The average of the sample members' answers to the "Emotional Well-being" was (2.82 out of 5) with a relative weight of 77.42%, which indicates neutral opinion by the sample members on this dimension. The highest item received the highest degree of approval from the sample members was the paragraph that states, "I believe that high workloads negatively affect my mental health." came in first place in terms of approval by the sample members, with a relative weight of 63.73%.

While the item that received the lowest degree of support from the sample members was the paragraph that states, "The nature of my work leads to physical exhaustion at the end of the day." in terms of approval by the sample members, with a relative weight 46.10%.

For Mental Health for Healthcare Workers in Saudi Arabia

Table (7): Mental Health for Healthcare Workers in Saudi Arabia

N = 296	Mean	Standard deviation	Relative weight	T-value	Sig	Agreement degree	Rank
1- I feel overwhelmed by my workload.	4.15	1.02	83.05	17.29	.000	agree	4
2- I often feel anxious about my job performance.	3.44	1.43	68.81	4.73	.000	agree	12
3- I have difficulty sleeping due to work-related stress.	4.14	1.08	82.71	16.11	.000	agree	5
4- I feel supported by my colleagues in managing stress.	4.34	1.00	86.78	20.49	.000	Strongly agree	1
5- I often experience feelings of sadness or hopelessness.	4.02	1.30	80.34	12.04	.000	agree	6
6- I find it hard to maintain a work-life balance.	4.00	1.21	80.00	12.70	.000	agree	7
7- I feel confident in my ability to cope with work-related challenges.	4.22	0.98	84.41	19.18	.000	Strongly agree	2
8- I have access to mental health resources if needed.	2.92	1.33	58.31	-0.98	.330	neutral	13
9- I frequently feel fatigued	3.63	1.36	72.54	7.11	.000	agree	11

or exhausted after work.							
10- I believe that my mental health is prioritized by my employer.	3.92	1.37	78.31	10.25	.000	agree	9
11- I often reflect on my emotional well-being at work.	3.92	1.19	78.31	11.86	.000	agree	10
12- I feel that I can talk openly about mental health issues with my supervisor.	4.17	1.01	83.39	17.73	.000	agree	3
13- I feel comfortable seeking help for my mental health concerns.	3.97	1.12	79.32	13.23	.000	agree	8
Mean of dimension	3.98	1.00	79.66	15.07	.000	agree	

The average of the sample members' answers to the "Mental Health for Healthcare Workers in Saudi Arabia" was (3.98 out of 5) with a relative weight of 79.66%, which indicates level of approval by the sample members on this dimension. The highest item received the highest degree of approval from the sample members was the paragraph that states, "I feel supported by my colleagues in managing stress." came in first place in terms of approval by the sample members, with a relative weight of 86.78%.

While the item that received the lowest degree of support from the sample members was the paragraph that states, "I have access to mental health resources if needed." in terms of approval by the sample members, with a relative weight 58.31%.

Diagnose study's hypothesis

- There is a statistically significant relationship ($\alpha \leq 0.05$) between the (Workload Factors) of workload on mental health among healthcare workers in Saudi Arabia.

To assess this relationship, person correlation coefficient is calculated, and the result showed that there is negative moderate significant relationship between the Workload Factors dimension of workload and the mental health among healthcare workers in Saudi Arabia. ($r = 0.503$ -, $sig = 0.000$).

- There is a statistically significant relationship ($\alpha \leq 0.05$) between the (Job Engagement) of workload on the mental health among healthcare workers in Saudi Arabia.

To assess this relationship, person correlation coefficient is calculated, and the result showed that there is positive strong significant relationship between the (Job Engagement) of workload on the mental health among healthcare workers in Saudi Arabia. ($r = 0.650$, $sig = 0.000$)

- There is a statistically significant relationship ($\alpha \leq 0.05$) between the (Emotional Well-being) of workload on the mental health among healthcare workers in Saudi Arabia.

To assess this relationship, person correlation coefficient is calculated, and the result showed that there is negative moderate significant relationship between the (Emotional Well-being) of workload on the mental health among healthcare workers in Saudi Arabia. ($r = -0.545$, $sig = 0.000$).

5. Discussion

This study provides valuable insights into the workload, job engagement, and emotional well-being of healthcare workers in Saudi Arabia, shedding light on critical factors that contribute to their mental health and job satisfaction. The findings emphasize several positive aspects, notably the high level of agreement on supportive job conditions and professional engagement, highlighting areas where healthcare professionals feel empowered and acknowledged in their roles.

One of the most significant findings relates to job engagement and its positive correlation with mental health. The majority of participants expressed a strong sense of satisfaction with their job assignments, recognizing the efforts made to help them manage their workload effectively. The positive correlation between job engagement and mental health underscores that feeling valued and supported in one's role contributes meaningfully to mental well-being. Healthcare workers who perceive their workload as fair, receive constructive feedback, and have opportunities for professional growth report higher job satisfaction. This indicates a well-rounded work environment where healthcare professionals feel motivated and recognized, fostering a sense of purpose and stability.

Another notable outcome was the high level of support healthcare workers receive from their colleagues, which ranked highest in terms of mental health benefits. Having access to a reliable support network not only improves job satisfaction but also plays a pivotal role in mental resilience. The camaraderie and open communication fostered among healthcare staff contribute to a shared responsibility for managing stress and challenges effectively. Furthermore, the ability to discuss mental health openly with supervisors has also contributed positively, providing healthcare workers with a safe space to address mental health concerns, which is vital in a demanding profession.

The overall high agreement on workload manageability is another strength revealed by this study. Many participants indicated they have sufficient time to complete tasks and feel that their workload remains balanced. This reflects positively on organizational policies and management practices aimed at workload distribution, showing that efforts to ensure manageable and fair workloads are generally effective. Moreover, the sense of control over work responsibilities correlates with reduced stress levels, contributing to a healthier work-life balance and enhancing productivity and satisfaction at work.

Lastly, the significant yet moderate relationship between emotional well-being and mental health in this context emphasizes a supportive framework that mitigates stress. Many respondents recognize that their high workloads are manageable, and that they can rely on their team for assistance when necessary. This environment helps alleviate some of the challenges associated with healthcare work, reinforcing a sense of stability and mental resilience. The positive organizational culture thus strengthens the mental well-being of healthcare workers, ultimately contributing to higher job engagement and satisfaction.

6. Conclusion

This study underscores the positive impact of job engagement, collegial support, and manageable workloads on the mental health of healthcare workers in Saudi Arabia. Findings reveal that fair workload distribution, professional growth opportunities, and open communication about mental health foster resilience and job satisfaction. The strong support from colleagues and a culture of constructive feedback are critical in enabling healthcare professionals to manage challenges effectively. These insights highlight the value of supportive organizational practices in enhancing the well-being of healthcare workers, providing a useful model for promoting mental health and job satisfaction in demanding healthcare environments.

7. Recommendations

1. Encourage teamwork and collegial support through structured mentorship and peer-support programs. Strengthening these networks can help healthcare workers manage stress more effectively and improve mental resilience.
2. Implement regular mental health check-ins and create channels for open dialogue about mental well-being. Providing accessible resources and training managers to support mental health discussions will foster a more supportive work culture.
3. To maintain manageable workloads, consider flexible scheduling options and fair task distribution. Regular workload assessments will help identify potential areas of overload and allow for timely adjustments to prevent burnout.
4. Offer continuous education, training, and career growth opportunities tailored to healthcare workers' needs. Professional development can enhance job satisfaction and keep workers engaged despite high demands.
5. Ensure healthcare workers have access to mental health resources, such as counseling services or wellness programs, and promote their use. Making these resources accessible and destigmatizing their use can provide additional support.
6. Introduce policies that promote a healthy work-life balance, such as flexible hours or time-off policies, to support overall well-being. This balance is essential for long-term job satisfaction and mental health stability among healthcare workers.

References

- Adriaenssens, J., De Gucht, V., & Maes, S. (2015). Causes and consequences of occupational stress in emergency nurses, a longitudinal study. *Journal of Nursing Management*, 23(3), 346–358. <https://doi.org/10.1111/jonm.12138>
- Aiken, L. H., Sloane, D. M., Ball, J., Bruyneel, L., Rafferty, A. M., & Griffiths, P. (2018). Patient satisfaction with hospital care and nurses in England: An observational study. *BMJ Open*, 8(1), e019189. <https://doi.org/10.1136/bmjopen-2017-019189>
- Alcântara, V. P., Vieira, C. A. L., & Alves, S. V. (2022). [Perspectives on the mental health concept: Analysis of Brazilian scientific productions]. *Ciencia & Saude Coletiva*, 27(1), 351–361. <https://doi.org/10.1590/1413-81232022271.22562019>

- Amriy, S. S. A., Alshaeri, A. A., Almalki, D. A. M., Alotaibi, B. S. B., Alamri, M. M., Alamri, F. S. L., Batougi, B. S., Almualid, R. J., Althwoy, A. H. A., & Khawaji, N. B. M. T. (2022). Navigating Stress and Burnout: Exploring Workload Impact on Healthcare Workers in Saudi Arabia 2022. *Journal of Survey in Fisheries Sciences*, 561–569. <https://doi.org/10.53555/sfs.v8i3.2635>
- Anderson, J. C., Pfeil, S., & Surawicz, C. (2017). Strategies to Combat Physician Burnout in Gastroenterology. *Official Journal of the American College of Gastroenterology | ACG*, 112(9), 1356. <https://doi.org/10.1038/ajg.2017.251>
- Angermeyer, M. C., Bull, N., Bernert, S., Dietrich, S., & Kopf, A. (2006). Burnout of caregivers: A comparison between partners of psychiatric patients and nurses. *Archives of Psychiatric Nursing*, 20(4), 158–165. <https://doi.org/10.1016/j.apnu.2005.12.004>
- Bardhan, R., Heaton, K., Davis, M., Chen, P., Dickinson, D. A., & Lungu, C. T. (2019). A Cross Sectional Study Evaluating Psychosocial Job Stress and Health Risk in Emergency Department Nurses. *International Journal of Environmental Research and Public Health*, 16(18), 3243. <https://doi.org/10.3390/ijerph16183243>
- Belingeri, M., Paladino, M. E., Labra, M., & Riva, M. A. (2020). Healthcare Workers With Diabetes: Need for More Attention in COVID-19 Outbreak. *Journal of Occupational and Environmental Medicine*, 62(9), e539. <https://doi.org/10.1097/JOM.0000000000001942>
- Bondagji, D., Fakeerh, M., Alwafi, H., & Khan, A. A. (2022). The Effects of Long Working Hours on Mental Health Among Resident Physicians in Saudi Arabia. *Psychology Research and Behavior Management*, 15, 1545. <https://doi.org/10.2147/PRBM.S370642>
- Books, C., Coody, L. C., Kauffman, R., & Abraham, S. (2017). Night Shift Work and Its Health Effects on Nurses. *The Health Care Manager*, 36(4), 347–353. <https://doi.org/10.1097/HCM.0000000000000177>
- Bourne, T., Wynants, L., Peters, M., Van Audenhove, C., Timmerman, D., Van Calster, B., & Jalmbrant, M. (2015). The impact of complaints procedures on the welfare, health and clinical practise of 7926 doctors in the UK: A cross-sectional survey. *BMJ Open*, 5(1), e006687. <https://doi.org/10.1136/bmjopen-2014-006687>
- Brophy, J. T., Keith, M. M., Hurley, M., & McArthur, J. E. (2020). Sacrificed: Ontario Healthcare Workers in the Time of COVID-19. *New Solutions*, 30(4), 267. <https://doi.org/10.1177/1048291120974358>
- Carayon, P., & Gürses, A. P. (2005). A human factors engineering conceptual framework of nursing workload and patient safety in intensive care units. *Intensive & Critical Care Nursing*, 21(5), 284–301. <https://doi.org/10.1016/j.iccn.2004.12.003>
- Civilotti, C., Berlanda, S., & Iozzino, L. (2021). Hospital-Based Healthcare Workers Victims of Workplace Violence in Italy: A Scoping Review. *International Journal of Environmental Research and Public Health*, 18(11), 5860. <https://doi.org/10.3390/ijerph18115860>
- Clough, B. A., March, S., Chan, R. J., Casey, L. M., Phillips, R., & Ireland, M. J. (2017). Psychosocial interventions for managing occupational stress and burnout among medical doctors: A systematic review. *Systematic Reviews*, 6(1), 144. <https://doi.org/10.1186/s13643-017-0526-3>
- d’Ettorre, G., Pellicani, V., Caroli, A., & Greco, M. (2020). Shift work sleep disorder and job stress in shift nurses: Implications for preventive interventions. *La Medicina Del Lavoro*, 111(3), 195. <https://doi.org/10.23749/mdl.v111i3.9197>
- Dall’Ora, C., Ball, J., Reinius, M., & Griffiths, P. (2020). Burnout in nursing: A theoretical review. *Human Resources for Health*, 18(1), 41. <https://doi.org/10.1186/s12960-020-00469-9>
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *The Journal of Applied Psychology*, 86(3), 499–512.
- Eckleberry-Hunt, J., Kirkpatrick, H., Taku, K., Hunt, R., & Vasappa, R. (2016). Relation Between Physicians’ Work Lives and Happiness. *Southern Medical Journal*, 109(4), 207–212. <https://doi.org/10.14423/SMJ.0000000000000437>

- Turki Saad Mohammed Alharbi, Abdullah Hamad Alhaqbani, Amal Ahmed Ismaili Bahkali, Bader Mohammed Hamed Almutairi, Jana Mohammed Altharawi, Fahd Abdullah Alqahtani, Adel Alhumaidi W Alsharari, Dalal Salem Alanazi, Abdulrahman Ali Al-Shahri, Badr Abdullah Melfi Aldosari, Fatima Abdullah Alqufaidi, Saud Mashal Alanazi, Majed Rzaq Alenazi, Mane Mohammed M Alamery, Obaid Saleh Samran Almutairi
- Enns, V., Currie, S., & Wang, J. (2015). Professional autonomy and work setting as contributing factors to depression and absenteeism in Canadian nurses. *Nursing Outlook*, 63(3), 269–277. <https://doi.org/10.1016/j.outlook.2014.12.014>
- Espinosa-Pinos, C. A., Lascano-Arias, G. S., Acosta-Pérez, P. B., & Acuña-Mayorga, J. M. (2023). Bibliometric Analysis of Mental Health Research in Populations Affected by Natural Disasters. 2023 IEEE Seventh Ecuador Technical Chapters Meeting (ECTM), 1–5. 2023 IEEE Seventh Ecuador Technical Chapters Meeting (ECTM). <https://doi.org/10.1109/ETCM58927.2023.10309075>
- Esquirol, Y., Perret, B., Ruidavets, J. B., Marquie, J. C., Dienne, E., Niezborala, M., & Ferrieres, J. (2011). Shift work and cardiovascular risk factors: New knowledge from the past decade. *Archives of Cardiovascular Diseases*, 104(12), 636–668. <https://doi.org/10.1016/j.acvd.2011.09.004>
- Järvelin-Pasanen, S., Sinikallio, S., & Tarvainen, M. P. (2018). Heart rate variability and occupational stress—Systematic review. *Industrial Health*, 56(6), 500. <https://doi.org/10.2486/indhealth.2017-0190>
- Jasiński, A. M., Derbis, R., & Walczak, R. (2021). Workload, job satisfaction and occupational stress in Polish midwives before and during the COVID-19 pandemic. *Medycyna Pracy*, 72(6), 623–632. <https://doi.org/10.13075/mp.5893.01149>
- Khamisa, N., Oldenburg, B., Peltzer, K., & Ilic, D. (2015). Work related stress, burnout, job satisfaction and general health of nurses. *International Journal of Environmental Research and Public Health*, 12(1), 652–666. <https://doi.org/10.3390/ijerph120100652>
- Kovačević, N. (2023). The impact of the COVID-19 pandemic on the mental health of the population of Serbia. *Zdravstvena Zastita*, 52(1), 82–93. <https://doi.org/10.5937/zdravzast52-44152>
- Moreno, C. R. de C., & Louzada, F. M. (2004). What happens to the body when one works at night? *Cadernos De Saude Publica*, 20(6), 1739–1745. <https://doi.org/10.1590/s0102-311x2004000600034>
- Portoghese, I., Galletta, M., Coppola, R. C., Finco, G., & Campagna, M. (2014). Burnout and Workload Among Health Care Workers: The Moderating Role of Job Control. *Safety and Health at Work*, 5(3), 152. <https://doi.org/10.1016/j.shaw.2014.05.004>
- Rasool, S. F., Wang, M., Zhang, Y., & Samma, M. (2020). Sustainable Work Performance: The Roles of Workplace Violence and Occupational Stress. *International Journal of Environmental Research and Public Health*, 17(3), 912. <https://doi.org/10.3390/ijerph17030912>
- Ribet, C., & Derriennic, F. (1999). Age, working conditions, and sleep disorders: A longitudinal analysis in the French cohort E.S.T.E.V. *Sleep*, 22(4), 491–504.
- Robertson, J. J., & Long, B. (2018). Suffering in Silence: Medical Error and its Impact on Health Care Providers. *The Journal of Emergency Medicine*, 54(4), 402–409. <https://doi.org/10.1016/j.jemermed.2017.12.001>
- Roelen, C. A. M., van Hoffen, M. F. A., Waage, S., Schaufeli, W. B., Twisk, J. W. R., Bjorvatn, B., Moen, B. E., & Pallesen, S. (2018). Psychosocial work environment and mental health-related long-term sickness absence among nurses. *International Archives of Occupational and Environmental Health*, 91(2), 195–203. <https://doi.org/10.1007/s00420-017-1268-1>
- Rostami, F., Babaei-Pouya, A., Teimori-Boghsani, G., Jahangirimehr, A., Mehri, Z., & Feiz-Arefi, M. (2021). Mental Workload and Job Satisfaction in Healthcare Workers: The Moderating Role of Job Control. *Frontiers in Public Health*, 9, 683388. <https://doi.org/10.3389/fpubh.2021.683388>
- Rouch, I., Wild, P., Anshau, D., & Marquie, J.-C. (2005). Shiftwork experience, age and cognitive performance. *Ergonomics*, 48(10), 1282–1293. <https://doi.org/10.1080/00140130500241670>
- Ruiz-Fernández, M. D., Pérez-García, E., & Ortega-Galán, Á. M. (2020). Quality of Life in

- Nursing Professionals: Burnout, Fatigue, and Compassion Satisfaction. *International Journal of Environmental Research and Public Health*, 17(4), 1253. <https://doi.org/10.3390/ijerph17041253>
- Saedpanah, K., Ghasemi, M., Akbari, H., Adibzadeh, A., & Akbari, H. (2022). Effects of workload and job stress on the shift work disorders among nurses: PLS SEM modeling. *European Journal of Translational Myology*, 33(1), 10909. <https://doi.org/10.4081/ejtm.2023.10909>
- Saksvik-Lehouillier, I., Bjorvatn, B., Hetland, H., Sandal, G. M., Moen, B. E., Magerøy, N., Akerstedt, T., & Pallesen, S. (2013). Individual, situational and lifestyle factors related to shift work tolerance among nurses who are new to and experienced in night work. *Journal of Advanced Nursing*, 69(5), 1136–1146. <https://doi.org/10.1111/j.1365-2648.2012.06105.x>
- Selamu, M., Thornicroft, G., Fekadu, A., & Hanlon, C. (2017). Conceptualisation of job-related wellbeing, stress and burnout among healthcare workers in rural Ethiopia: A qualitative study. *BMC Health Services Research*, 17, 412. <https://doi.org/10.1186/s12913-017-2370-5>
- Shanafelt, T. D., Mungo, M., Schmitgen, J., Storz, K. A., Reeves, D., Hayes, S. N., Sloan, J. A., Swensen, S. J., & Buskirk, S. J. (2016). Longitudinal Study Evaluating the Association Between Physician Burnout and Changes in Professional Work Effort. *Mayo Clinic Proceedings*, 91(4), 422–431. <https://doi.org/10.1016/j.mayocp.2016.02.001>
- Shaw, J. B., & Weekley, J. A. (1985). The Effects of Objective Work-load Variations of Psychological Strain and Post-Work-Load Performance. *Journal of Management*, 11(1), 87–98. <https://doi.org/10.1177/014920638501100108>
- Silva-Junior, J. S., & Fischer, F. M. (2024). PL09 MENTAL HEALTH OF FRONTLINE HEALTHCARE WORKERS AND THE COVID-19 PANDEMIC. *Occupational Medicine*, 74(Supplement_1), 0–0. <https://doi.org/10.1093/occmed/kqae023.0009>
- Ulrich, B., Barden, C., Cassidy, L., & Varn-Davis, N. (2019). Critical Care Nurse Work Environments 2018: Findings and Implications. *Critical Care Nurse*, 39(2), 67–84. <https://doi.org/10.4037/ccn2019605>
- van der Wal, R. A. B., Wallage, J., & Bux, M. J. L. (2018). Occupational stress, burnout and personality in anesthesiologists. *Current Opinion in Anaesthesiology*, 31(3), 351–356. <https://doi.org/10.1097/ACO.0000000000000587>
- Wallace, J. E., Lemaire, J. B., & Ghali, W. A. (2009). Physician wellness: A missing quality indicator. *Lancet* (London, England), 374(9702), 1714–1721. [https://doi.org/10.1016/S0140-6736\(09\)61424-0](https://doi.org/10.1016/S0140-6736(09)61424-0)
- Yang, B. X., Stone, T. E., Petrini, M. A., & Morris, D. L. (2018). Incidence, Type, Related Factors, and Effect of Workplace Violence on Mental Health Nurses: A Cross-sectional Survey. *Archives of Psychiatric Nursing*, 32(1), 31–38. <https://doi.org/10.1016/j.apnu.2017.09.013>