Work-Life Balance and Mental Health of Egyptian and Saudi Health Professionals Managing COVID-19 Patients: A Comparative Cross-Sectional Study

Amal I Khalil[1], Manar S., Almotairi[2], Eman A. Shokr[3], Hanaa A. Radwan[4]

[1]Professor of Psychiatry and Mental Health Nursing, Faculty of Nursing, Menoufia University, Egypt and King Saud bin Abdelaziz University for Health Sciences, College of Nursing, Jeddah, Saudi Arabia

[2]king Fahad General Hospital, Jeddah, Saudi Arabia

[3]Assistant professor of Family and Community Health Nursing Department, Faculty of Nursing Menoufia University, Egypt

[4]Lecturer of Psychiatric and Mental health Nursing, Faculty of Nursing Menoufia University, Egypt.

Abstract

Background Since December 2019, the world fought the coronavirus disease, and the health care professionals were the most vulnerable group of people who suffered mentally and physically. The current study aimed to assess work-life balance and mental well-being among Saudi and Egyptian health care professionals managing COVID-19 patients. **Methods:** A comparative cross-sectional study was used. Data were collected during the period from spring 2020 to the fall of 2021 to recruit 403 Egyptian and Saudi Health Care Professionals managing Covid patients in Jeddah, Saudi Arabia, and Menoufia Governorate, Egypt. Three main tools were used including demographic background, life balance scale, and Mental health inventory (MHI). The tools were submitted on an online Google Form through social media and networks. Results: Out of a total of 403 study participants, 307 (76.2%) were female and 96 (23.8%) males, the majority (82.6 %) studied bachelor's degrees and more than two-thirds (68%, 65.3%) were working in the Frontline position and primary hospital respectively. In the mental health domains (anxiety, depression, behavioral control, psychological well-being, and total mental health domains), Saudi Arabian participants were significantly higher (27.06 ±4.48, 16.77±4.21) than Egyptian participants (22.69±4.37, 9.24 ±3.14). Additionally, the mental health inventory total score and behavioral control scores. **Conclusion and Recommendations:** The study concluded that the COVID-19 outbreak has a significant impact on the work-life balance score and mental well-being of health care professionals managing patients with COVID-19. A considerable proportion of health care professionals reported symptoms of depression, anxiety, and stress. The mean score of life balance, behavioral control, psychological well-being, and total mental health domains were lower in Egyptian than in Saudi Arabia health care professionals. Therefore, an extensive rapid psychological intervention to promote mental well-being targeting those health care professionals needs to be implemented.

Keywords: life balance, psychological wellbeing, Saudi, Egyptian, covid19

I. INTRODUCTION

COVID-19 is an ongoing global pandemic of Corona Virus Disease 2019 that is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The first case was reported in December 2019 in Wuhan, China. In March 2020, World Health Organization declared it is an outbreak global health emergency. The severity of COVID-19 symptoms ranges from mild to life-threatening, especially in elderly people who have medical conditions. People remain contagious for up to 20 days and can spread the disease even if they are asymptomatic (Khalil,2020) and {Wu, et al., 2021). The Ministry of Health reported the first case of COVID-19 in the kingdom of Saudi Arabia was on the second of March 2020. Then, the kingdom had the highest confirmed cases in the Arabian Gulf. Since the beginning of COVID-19, more than

500,000 cases and more than 8000 deaths were reported from MOH. As a result of reported cases, KSA responded to this pandemic by suspending educational facilities, social gatherings, sporting events, domestic travel as well as international flights. A quarantine was established and during hajj 2020 the number of pilgrims was reduced to minimize the spread of the infection. As a result, of this global pandemic, most of the population experienced psychological symptoms. In a study of 1160 participants, reported 28.3% suffered from depression, 24% suffered from anxiety, and 22.3% suffered from stress symptoms. (Alkhamees, et al 2020).

Whereas, in Egypt first case was confirmed on the third of February 2020. And in a few months' cases reached more than 300,000 and deaths reached up to 17,000 (WHO). Therefore, all schools and universities, restaurants, mosques, and all social

activities including traveling were closed and a lockdown was initiated. A study that investigated the impact of COVID-19 among Egyptian adults found out that 52% of the participants had moderate to severe psychological impacts s which affect the health care workers (HCW) work-life balance and mental wellbeing (El-Zoghby, et al 2020).

Work-life balance is a state of harmony between the professional life and personal life, the equivalent between both lives is strenuous, mostly for the health care practitioners who worked for long hours with a tough schedule and shorting of staff? Being a health worker means dealing with various tasks, and communicating with numerous patients along with their families. Therefore, it is easy for health professionals to develop psychological disorders such as anxiety, depression, and burnout. Therefore, since December 2019 when the world fought the coronavirus disease the health care professionals were the most vulnerable group of people who suffered mentally and physically.

Accordingly, a study found out that the Covid-19 pandemic had affected the nurses and their work-life balance which resulted in psychological disorders. ([Yayla, et. Al., 2021) Moreover, a study conducted between September 1 and September 25, 2020, found that the employed mothers were considered to either leave their jobs or reduce their work hours to a part-time job. (Matulevicius et.al 2021). Another study conducted by (Basak, et.al., 2021) in Bangladesh reported that feminine work-life was related to job stress and dissatisfaction. Moreover, the COVID-19 pandemic has harmed the mental health and psychological well-being of all population, but it has a significant impact on health care providers who stands on the frontline of this pandemic.

They are directly involved in the diagnosis, treatment, and care of COVID patients. Those workers are at high risk to develop psychological symptoms and mental health disorders. Mental health is more than the absence of mental disorders, it affects a person's thinking, feeling, behavior, and ability to relate to others. Health professionals are at the greatest risk to experience psychological disorders such as depression, anxiety, burnout, and high stress. Therefore, mental health should be taken as a priority, especially for those who are fighting the pandemic. Therefore, the current study looked at the mental health and psychological well-being of health care providers. Although WHO reported that 89% of countries announced that mental health and psychological support will be part of their COVID-19 response plans, however, only 17% of these countries have supplementary funds to cover these plans (WHO, 2020). Additionally, (Choi et al.,2017) reported that work-

life balance is significantly related to mental health status. Another study which was conducted in Korea revealed that work-life balance is strongly associated with the mental health of their workers. While in Taiwan a study reported a positive correlation between long working hours and occupational stress with work-life balance while it is negatively correlated with health care workers' job satisfaction. (Hsu et al., 2019)

Moreover, numerous studies have been discussed regarding the mental and psychological health of health care workers during the Covid-19 pandemic. Similarly, there was a study conducted in Italy found out the mental health of their health care workers at the greatest risk of emotional burnout. (Betinsoli, et al., 2020). Furthermore, there was a study conducted in Verona hospital reported increased symptoms of burnout as well as emotional exhaustion among health care providers. (Lasalvia, et al. 2021). Besides that, nurses who are taking care of COVID patients in Wuhan, China experience severe psychological burdens. (Lai, et al.,2019). Therefore, a systematic review study suggested that COVID-19 can be one of the major risk factors for stress in health caregivers. Many sociodemographic variables such as gender, career, age, place of work, and psychological variables such as lack of social support were found to be associated with stress and insomnia among health care professionals. (Sporthy, et al., 2020).

Additionally, a study found out that health care workers who are exposed to SARS- Cov2 patients are at high risk of developing anxiety symptoms, depression, and sleep disorders especially who are working in emergency rooms, ICU, and infectious wards. (Wańkowicz, et al., 2020). Furthermore, another study conducted in the UK demonstrated that 3.5% and 42% rates of burnout were reported among doctors and nurses while, 20% of the respondents experienced anxiety, and 11% experienced depression (Denning, et al., 2021).

Likewise, a cross-sectional survey study was conducted in Nepal, which found that 41.9% of their health workers had symptoms of anxiety, 37.5% had depression and 33.9% had symptoms of insomnia. Although nurses were more likely to experience anxiety symptoms than other health care providers (Khanal, et al., 2020). Additionally, a cross-sectional study conducted in China was divided into 3 regions Wuhan, other regions in Hubei province, and regions outside Wuhan province to compare interregional differences have found a huge impact on mental health symptoms among their participants. 50.4% reported depression symptoms, 44.6% reported anxiety, 34% reported insomnia, and 71.5% reported stress (Lai, et al., 2020).

To sum up, COVID-19 resulted in a significant increase in psychological disorders, however, since scientists discovered the vaccine for this pandemic the risk of mental health has been minimized, and economic and social outcomes have been improved (Khanal, et al.,2021).

1.1 SIGNIFICANT OF THE STUDY:

The ongoing COVID-19 pandemic has influenced people's mental health and psychological well-being. It is evidenced by (Alkhamees, et al., 2020) who reported that the general population in KSA suffered from depression, anxiety, and stress. Whereas, in Egypt, 52% of Egyptian adults had moderate to severe psychological impacts (El-zoghby, et al., 2021). Numerous studies have discussed the mental health and psychological disorders among HCWs who are on the front line facing this pandemic. A study suggested that COVID-19 is one of the independent risk factors for stress among HCWs (Sporthy, et al., 2021). As well as it was reported that HCWs who are working in critical departments and dealing with covid-19 patients are at higher risk to develop anxiety, depression, and sleep disorders.

With these thoughts in mind, the researchers think about conducting this cross-sectional study targeting all health care workers to consider their mental health and psychological well-being. The findings of this study will consider the importance of mental health among general people and HCWs in particular. Thus, a program on mental health and mindfulness may be arrived at.

2. AIM OF THE STUDY:

The current study aimed to assess Work-Life Balance and Mental wellbeing among Saudi and Egyptian Health Care Professionals Managing COVID-19 Patients. More specifically, the study was conducted to:

1. Assess participants' level of mental well-being and Work-Life Balance.
2. Compare Saudi and Egyptian participants concerning the level of Mental well-being and work Life Balance
3. Examine the correlation between the participants' demographic background and their mental well-being and work-life balance related to working with Covid 19 patients during the pandemics.

2.1. RESEARCH QUESTIONS
The study was answered the following questions:

Q1: Is there a difference between Egyptian and Saudi professionals working with Covid 19 patients regarding level of mental wellbeing?

Q2: Is there a balance in the work-life of Egyptian and Saudi professionals working with Covid 19 patients?

Q3: Is there a correlation between the demographic background of the participants from both countries and their level of mental well-being and their balance in work life?

3. METHODOLOGY:
3.1. RESEARCH DESIGN:

A comparative cross-sectional descriptive research design was used since it effectively measures the prevalence of a specific phenomenon in a selected population at the same point in time. Therefore, this design is applied to our study to measure the Work-Life Balance and Mental well-being among Saudi and Egyptian Health Care Professionals Managing COVID-19 Patients

3.2 Setting:

This study was conducted using an online self-administered questionnaire through using Google Form for Health Care Professionals in Menoufia governorate, Egypt, and Health Care Professionals in Jeddah, Saudi Arabia.

3.3 Subjects:
A non-probability convenient sampling technique was utilized to achieve the purpose of the current study. A purposive sample of 205 healthcare professionals including nurses, pharmacists, and physicians in Menoufia governorate and 198 healthcare professionals in Jeddah, Saudi Arabia obtained from social networks like Facebook, Telegram, and WhatsApp groups. Who fit the inclusion criteria; understand the purpose of the study, had a Facebook, telegram, and WhatsApp account, and agree to participate and work with Covid 19 patients?

3.4 SAMPLE SIZE CALCULATION:
The sample size was calculated by using the Raosoft software on the website www.raosfoft.com/samplesize.html. The total number of the nurse population in the National Guard Hospital in Jeddah for 2020 -2021 is 1300 nurses. while the number of professionals working in the Egyptian university hospital was 1000. Therefore, the required sample size was estimated at a 95% confidence level with an estimated 10% response distribution and a margin of error of +/- 5%. The required minimum sample size was estimated to be 297 from Saudi Arabia and

287 from Egypt to account for the 10% non-response rate previously stated. Due to the expected low response among nurses and other healthcare professionals, we aim to reach out to the entire population in both countries.

3.5 TOOLS OF THE STUDY:

Three tools were utilized to accomplish the aim of the current study as follows:

1. Demographic and personal characteristics

form that enquires the participants about their age, marital status, residence, level of education, employment position, numbers of weeks they have spent in Lock-down because of the pandemic, and what type of hospital are they working in.

2. Friedman Life Balance Scale

According to Friedman (2016), this questionnaire was designed to assess how health professionals felt about their life balance during the Covid19 pandemic. Using the scale for research and psychotherapy is already permitted on the author's website. The scale has 30 statements ranging from 0 to 5 on a Likert scale. The degree to which each item describes the participants during the time of the pandemic while they are dealing with the Covid 19 situations as 0 = never, 1 = seldom, 2 = a little bit, 3 = somewhat, 4 = a lot, 5 = a great deal. The Friedman Life Balance scale is divided into three subscales. There are 3 subscales using ten questions each. The FLBS1 contains Reflect, Clarify, Sort (10 questions), the second FLBS 2 is Understanding Self and Others (11-20 questions), and the FLBS3 is concerned with Self-Forgiveness, Love, and Spirituality (21-30 questions). Friedman Life Balance Score was calculated by adding the first three subscales and writing that value on the blank line next to it.

Based on Freidman's Life Balance Scale, people with high scores can clearly and easily reflect on life; clearly understand and connect with themselves and others; and easily indulge in self-forgiveness, self-compassion, and self-love. Typically, they enjoy high levels of well-being, life satisfaction, hope, self-worth, the forgiveness of others and circumstances, and flourishing. In addition, they tend to be highly positive, resilient, and have good mental health, gratitude, wellness behaviors, and physical well-being whereas they have low levels of depression, anxiety, anger, total stress, emotional distress, and suicidal thoughts.

Interpretation and scoring:

Based on the following equation, the Friedman Life Balance Scale Total Score is calculated (Total x 2/3^2) Means 53.27 and SD 14.70, Scoring Range is 0-75, with very high scores ranging from 70-75, high scores 62-69, average scores 46-61, low scores 31-45 and extremely low scores ranging from 0-30. In the reliability analysis of the questionnaires, Cronbach Alpha was 0.93 for the total scale (30 items) and FLBS 1, 2, and 3 were separately 0.86.

2. MENTAL HEALTH INVENTORY SCALE Mental Health Domains

This scale was adapted as it was created by **Viet & Ware, (1983**). It is a self-report tool used to measure the mental health (general psychological distress and well-being) of health care professionals managing patients during the covid-19 pandemics. The original scale consists of 38 items which were modified by the researcher to be 32 items due to some similarities and redundancies of the removed statements with others as was reported by the pilot sample. the scale is divided into 2 main domains as follows:

a. A psychological distress scale consisted of 24 items after modification it became 19 items, this scale consists of three subscales namely: Anxiety – (10 items) 2, 3, 11, 13, 15, 25, 29, 32, 33 and 35, it became 7 items omitted items was 25, 32, 35. Depression – (5 items) became 4 which are 9, 19, 30, and 36, 38 the omitted item was (38). Loss of behavioral / emotional control - (originally 9 items) 8, 14, 16, 18, 20, 21, 24, 27 and 28. Item number 8 was removed to be 8 items

b. Psychological Well-being (14 items become 13 items). For this scale, the researcher omitted one item (31). The score range was (1) Never - (6) always for 2 items number (2, 3) and range from (1) None of the time – (6) all of the time for all remaining items. The reverse scoring (6-1) was adopted for the items 2, 3, 9, 11, 13, 15, 16, 19, 20, 21, 24, 27, 29, 30, 33, 36.

The total scoring for mental health is interpreted as the following: the higher scores on psychological distress indicate negative states of mental health. To calculate the score for subscales, the items were computed against each subscale into different variables. For anxiety subscale (higher scores = greater anxiety), for depression (higher scores = greater depression), and for loss of behavioral/emotional control (higher scores = greater loss of behavioral/emotional control). The Psychological Well-being when it was computed provided a score described as the higher the scores on the psychological well-being the more the positive states of mental health. The internal

consistency of the scale was calculated using Cronbach's alpha coefficients and reported to be (86.7) which indicates higher acceptable reliability.

3.6. VALIDITY AND RELIABILITY

The research tools were translated into Arabic and back-translated to ensure the verification of the language and then reviewed by a jury of independent experts in the field of study for content validity and tested for internal reliability using the Cronbach alpha correlation coefficient. The questionnaires showed strong reliability after the pilot study which was collected from 10 participants to ensure the clarity of the questionnaires and the needed time to fill them. Reliability was assessed by examining the internal consistency of participants' responses. Cronbach alpha coefficient was calculated for the dimensions and subscales of the tool, the values of Cronbach alpha coefficients were calculated and reported for the work-life balance scale to be 97.3 while 86.7 was reported for the mental health inventory.

3.7 DATA COLLECTION PROCEDURE:

Data collection was implemented during the beginning time of the pandemics in Spring 2020 – fall 2021. Once the proposed study was approved by the research committee of the Research Unit at the College of Nursing, Menoufyia university, data collection was initiated after arranging with the selected settings

The questionnaires were transferred into Google Form and submitted to the manager of National guard health affairs to approve the distribution of the questionnaires to the emails of departmental managers in the same setting. Parrell to that the communication was done with the university hospital manager at Menoufyia university to approve the distribution of the questionnaires to the different departments in the hospital. An online survey portal, Google Form was created and sent via WhatsApp, Facebook group, and telegram, and participants were invited to complete and submit the form. Study participants were encouraged to fill out the online survey form and reminded many times by the manager of each department. Participants' responses are neatly and automatically collected in Forms to reach 197 health professionals from Saudi Arabia and 204 participants from Egypt.

4. DATA MANAGEMENT AND ANALYSIS PLAN:

The data were coded and analyzed using SPSS's latest version (24). Data were presented using descriptive statistics for discrete variables in the form of frequencies and percentages, means, and standard deviations. The Chi-square or Fisher exact test was used to compare categorical data. For comparison between numerical data, the student's *t-test*, and Analysis of Variance (ANOVA) was applied. Pearson correlation test was used to identify the correlation value between studied variables. The significance level was adjusted and tested at $p<0.05$.

5. ETHICAL AND LEGAL ISSUES:

The ethical research committee approval on the subject of research was taken from the Faculty of Nursing, Menoufia University, Egypt. Also, the cover page of the questionnaire included a short introduction regarding the purpose of the study, an announcement of anonymity and confidentiality, instructions for filling in the questionnaire, as well as the link and quick response (QR) code of the online questionnaire. Participants who gave consent to willingly engage in the study would click the 'Continue' button and would then be directed to complete the self-administered questionnaire. Subjects were informed that their participation in the study is voluntary, and they can withdraw without any penalty at any time. They have been assured that their answers kept anonymous during the study and that their data will be kept confidential. The PI assures that all data both hard and soft copies will be stored and accessed by the research team only.

6. RESULTS:

Table (1) Distribution of studied groups according to their demographic background Saudi (n =198) and Egyptian (n=205)

Studied variables		Egyptian (n=205)	Saudi (n=198)
		$\mathscr{F}$ (%)	$\mathscr{F}$ (%)
Age	24 years and below	188 (91.7%)	39 (19.7%)
	25–29 years	11 (5.4%)	44 (22.2%)
	30–34 years	6 (2.9%)	43 (21.7 %)
	35–39 years	0 (0.0%)	30 (15.2%)
	40–44 years	0 (0.0%)	19 (9.6%)
	45–49 years	0 (0.0%)	8 (4.0%)
	50–54 years	0 (0.0%)	10 (5.1%)
	55 years and above	0 (0.0%)	5 (2.5%)
Gender	Male	68 (33.2 %)	28 (14.1 %)
	Female	137 (66.8 %)	170 (85.9%)
Occupation	Physician /Doctor	1 (0.5)	14(7.1%)
	Nurse	185 (90.7%)	148 (74.7%)
	Pharmacist	13 (6.3%)	3(1.5%)
	Dietician	1(0.5 %)	2(1.0%)
	laboratory Technician	1(0.5 %)	2(1.0%)
	Health educator	3 (1.5 %)	12(6.1%)
	Research Scientist	0	5 (2.5%)
	Health Care Workers	0	12(6.1%)
	Academicians (Faculty, Teachers, etc)	0	5(2.5)
	Others	0	12(6.1%)
Marital status	Single	109 (53.2%)	102 (51.1%)
	Married	85 (41.5 %)	85 (42.9 %)
	Divorced/Separated	11 (5.4%)	11 (5.6 %))
Employment status	Full-time employee	31 (15.1%)	146 9 (73.7%)
	Part-time employee	20	20 (10.1%)
	Self-employed	57 (27.8 %)	6 (3.0 %)
	Unemployed	7 (3.4%)	13 (6.6%)
	Other	110 (53.7%)	13 (6.6%)
Living status	Alone	117 (57.1 %)	52 (26.3%)
	Partner	13 (6.3 %)	62 (31.3%)
	Stepchildren	28 (13.7%)	7 (3.5 %)
	Bio-children	17 (8.3 %)	17 (8.6 %)
	Other children	30 (14.6 %)	1 (0.5 %)
	Other families	0 (0.0 %)	19 (9.6 %)
	Other	0 (0.0 %)	40 (20.2 %)
Spent weeks in Lock-down	One	120 (58.5 %)	46 (23.2 %)
	Two	21(10.2 %)	33 (16.7 %)
	Three	12 (5.9 %)	12 (6.1 %)
	Four	20 (9.8 %)	20 (10.1 %)
	Five	7 (3.4 %)	8 (4.0%)
	Six	5 (2.4 %)	10 (5.1 %)
	Seven	1 (0.5 %)	5 (2.5 %)
	Eight	19 (9.3 %)	64 (32.3 %)
Level of education	Certified diploma	1 (0.5 %)	31(15.7%)
	Bachelor	200 (97.6 %)	133 (67.2 %)
	Master	3 (1.5 %)	26 (13.1%)
	PhD	1(0.5)	8 (4.0 %)
Working position	Frontline	147 (71.1%)	127 (64.1%)
	Second-line	58 (28.3%)	71 (35.9)
Hospital type	Primary	159 (77.6%)	104 (52.5 %)
	Secondary	22 (10.7 %)	43 (17.2 %)
	Tertiary	24 (11.7 %)	60 (30.3 %)

Table (1) indicated that the majority of (91.7%) studied Egyptian participants were in the age group (24 years and below), (66.8 %) were females, 90.7% % were nurses, and more than half of them (53.4%) were single. The table also added that (53.7%) and 57.1% respectively of the studied participants were in their intern year and lived alone. In addition, the table shows that the educational level, (97.6 %) of studied participants had a bachelor's degree, and (71.1%) and (77.6%)

respectively were working in the Frontline position and primary hospitals. As regards the demographic data of Saudi participants, the table revealed that (78.8 %) of the studied participants were in the age group (24 - 40 years), (85.9 %) were females, 74.4. % % were nurses, and more than half of them (51.1%) were single. Additionally, (67.2 %), (73.7%), (64.1%) and (52.5 %) respectively of the studied participants had bachelor's degrees, and full-time employment status, in a frontline position and in work in a primary level hospital.

Table (2): Comparison of Mental Health Domains among studied Egyptian and Saudi participants

Items	Country	Mean± SD	Degree of freedom	T-test	P-value
Mental Health Domains					
Anxiety	Egypt	17.8±3.72	402	9.907	0.000
	Saudi Arabia	23.80 ± 4.493			
Depression	Egypt	9.24 ±3.14	402	20.406	0.000
	Saudi Arabia	16.77±4.21			
Behavioral control	Egypt	18.6±4.5	402	26.645	0.000
	Saudi Arabia	32.8±6.38			
Psychological wellbeing domain	Egypt	45.49 ±6.56	402	5.465	0.000
	Saudi Arabia	49.28±7.35			
Total	Egypt	95.7 ±11. 1	402	367.502	0.000
	Saudi Arabia	125.78±19.3			

Table (2): Revealed that there was a highly statically difference in the mental health domains (anxiety, Depression, Behavioral control, psychological wellbeing, and total mental health domains) at P=0.000. The mean score for anxiety and depression (23.80 ± 4.493, 16.77±4.21respectively) was higher in the Saudi Arabia participants than in Egyptian participants (17.8±3.72, 9.24 ±3.14). Also, the mean score for behavioral control and psychological well-being and total mental health domains (18.6±4.5, 45.49 ±6.56, 95.7 ±11.1 respectively) were lower in Egyptian participants than in Saudi Arabia participants (32.8±6.38, 49.28±7.35, 125.78±19.3)

Table (3): Comparison of Life Balance among Egyptian and Saudi participants

Items	Country	Mean ± SD	Degree of freedom	T-test	P-value
Life Balance	Egypt	80.67± 25.79	402	65.605	0.000
	Saudi Arabia	101.9 ±26.79			

Table (3): Reflected that there was a highly statistical difference in the life balance among studied participants. The total mean score of life balance of Saudi Arabia studied participants was (101.9 ±26.79) while among Egyptian participants was (80.67± 25.79) at P=0.000

Graph (1): Total mean score of Mental Health and life balance among Egyptian and Saudi participants

Life balance and Mental Health domains among Saudi and Egyptians health care professionals n= 403
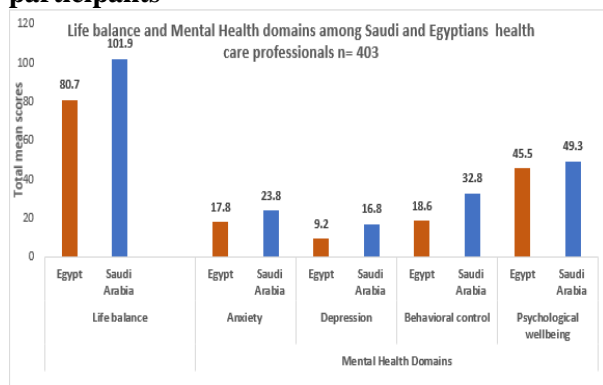
Figure (1) exhibited the life balance total mean score among Egyptian (80.8) and Saudi (102.1) health professionals. As well, Mental health domains among Egyptians (anxiety 22.7, depression 9.2, behavioral control,18.6 and psychological well-being was 45.5) and Saudi professionals (anxiety 27.1, depression 16.8, behavioral control 33.0 and psychological well-being 49.3)

Table (4): Relationship between Socio-demographic characteristics and Mental Health domains among Egyptian and Saudi participants n=403

Studied variables		Country	Mental Health		T-test	P-value
			Mean	S.D.		
Age	24 years and below	Egypt	99.88	28.89	2.406	0.017
		Saudi Arabia	88.16	18.14		
	25–29 years	Egypt	105.27	17.97	3.444	0.001
		Saudi Arabia	78.02	24.57		
	30–34 years	Egypt	95.33	33.63	1.092	0.281
		Saudi Arabia	83.39	23.78		
Gender	Male	Egypt	98.00	26.86	2.648	0.009
		Saudi Arabia	82.33	22.44		
	Female	Egypt	101.06	29.30	5.911	0.000
		Saudi Arabia	83.04	24.14		
Occupation	Physician /Doctor	Egypt	100.33	28.72	3.549	0.000
		Saudi Arabia	71.31	24.96		
	Nurse	Egypt	88	0.00	0.168	0.867
		Saudi Arabia	83.97	23.93		
	Pharmacist	Egypt	100.38	29.25	1.929	0.074
		Saudi Arabia	64.00	30.64		
Marital status	Single	Egypt	100.50	29.77	4.784	0.00
		Saudi Arabia	82.83	23.15		
	Married	Egypt	83.564	23.71	3.848	0.00
		Saudi Arabia	98.517	26.85		
	Divorced/Separated	Egypt	107.18	28.71	2.141	0.045
		Saudi Arabia	79.18	32.52		

Employment status	Full-time employee	Egypt	102.46	26.18	4.016	0.00
		Saudi Arabia	82.89	24.15		
	Self-employed	Egypt	99.21	28.81	1.615	0.112
		Saudi Arabia	77.8	22.35		
	Unemployed	Egypt	107.29	27.32	1.315	0.112
		Saudi Arabia	74.08	19.39		
	Other	Egypt	99.16	29.32	0.121	0.904
		Saudi Arabia	100.15	8.039		
Living status	Alone	Egypt	99.53	27.45	0.471	0.638
		Saudi Arabia	101.17	25.69		
	Partner	Egypt	104.89	26.43	2.030	0.046
		Saudi Arabia	87.09	24.28		
	Stepchildren	Egypt	107.07	24.68	2.028	0.05
		Saudi Arabia	87	16.63		
	Bio-children	Egypt	101	32.18	2.502	0.02
		Saudi Arabia	76.24	25.09		
Spent weeks in Lock-down	One	Egypt	99.59±	29.6	4.956	0.000
		Saudi Arabia	74.34	26.7		
	Two	Egypt	99.76	22.52	2.157	0.046
		Saudi Arabia	85.94	23.23		
	Three	Egypt	109.92	16.65	3.548	0.002
		Saudi Arabia	79.08	25.07		
	Four	Egypt	98.5	33.19	1.640	0.109
		Saudi Arabia	82.75	27.26		
	Five	Egypt	110.43	15.09	2.906	0.012
		Saudi Arabia	83.75	19.72		
	Six	Egypt	106.8	23.09	1.278	0.223
		Saudi Arabia	96.3	9.37		
	Eight	Egypt	93.58	33.04	1.012	0.315
		Saudi Arabia	87.16	21.14		
Level of education	Bachelor	Egypt	83.83	23.82	5.306	0.000
		Saudi Arabia	99.77	28.61		
	Master	Egypt	99.66	11.06	1.258	0.219
		Saudi Arabia	79.46	27.19		
Working position	Frontline	Egypt	101.81	27.48	4.160	0.000
		Saudi Arabia	18.48	2.35		
	Second-line	Egypt	99.17	27.35	3.857	0.000
		Saudi Arabia	81.48	24.69		
Type of Hospital associated with you	Primary	Egypt	99.88	28.89	5.566	0.000
		Saudi Arabia	81.24	24.24		
	Secondary	Egypt	105.27	17.97	3.005	0.004
		Saudi Arabia	79.68	26.23		
	Tertiary	Egypt	95.33	33.63	0.817	0.417
		Saudi Arabia	87.70	21.38		

Table (4) demonstrated that there was a highly statistically significant relationship between mental health and age between 25-29, female gender, physician occupation, marital status, full-time employment status, Bachelor level of education, spent weeks in lock-down, working position, and primary hospital among Egyptian and Saudi Arabia participants at p- value<0.01. However, there was a significant relationship between Secondary hospital, living status, and mental health among Egyptian and Saudi Arabia participants at p- value< 0.05.

Table (5) Relationship between Socio-demographic characteristics and Life Balance among studied participants n=403

Studied variables		Country	Life Balance		T-test	P-value	%
			Mean	S.D.			
Age	24 years and below	Egypt	92.66	14.00	6.190	0.000	56.3
		Saudi Arabia	77.84	10.27			
	25–29 years	Egypt	105.27	17.92	7.387	0.000	13.6
		Saudi Arabia	77.57	8.81			
	30–34 years	Egypt	95.33	33.63	2.83	0.007	12.2
		Saudi Arabia	78.19	9.05			
Gender	Male	Egypt	94.26	12.84	6.989	0.000	23.8
		Saudi Arabia	74.89	10.39			
	Female	Egypt	91.74	14.35	10.49	0.000	76.2
		Saudi Arabia	77.66	8.99			
Occupation	Physician /Doctor	Egypt	92.76	13.95	5.036	0.000	49.6
		Saudi Arabia	71.31	24.95			
	Nurse	Egypt	88	000	1.138	0.257	37
		Saudi Arabia	77.57	9.13			
	Pharmacist	Egypt	90.86	15.61	1.168	0.261	4
		Saudi Arabia	79	18.03			
Marital status	Single	Egypt	92.5	14.76	8.800	0.000	52.4
		Saudi Arabia	77.37	9.38			
	Married	Egypt	92.06	12.90	9.138	0.000	42.5
		Saudi Arabia	76.59	8.79			
	Divorced/Separated	Egypt	97.45	12.22	3.216	0.002	5.5
		Saudi Arabia	81.82	10.52			
Employment status	Full-time employee	Egypt	92.45	11.73	7.762	0.000	43.9
		Saudi Arabia	77.59	9.19			
	Self-employed	Egypt	94.98	14.04	3.076	0.003	15.6
		Saudi Arabia	75.4	6.07			
	Unemployed	Egypt	98.43	14.36	3.867	0.001	5
		Saudi Arabia	76.46	10.82			
	Other	Egypt	90.98	14.22	3.854	0.000	30.5
		Saudi Arabia	75.31	10.11			
Living status	Alone	Egypt	93.02	13.28	8.108	0.000	41.9
		Saudi Arabia	76.61	8.63			
	Partner	Egypt	90.77	12.38	4.179	0.000	18.6
		Saudi Arabia	77.19	10.27			
	Stepchildren	Egypt	96.39	13.83	3.940	0.000	8.7
		Saudi Arabia	74.57	9.16			
	Bio-children	Egypt	93.35	13.44	3.895	0.000	8.4
		Saudi Arabia	76.59	11.58			
Spent weeks in Lock-down	One	Egypt	92.41	14.34	6.071	0.000	41.2
		Saudi Arabia	78.4	9.51			
	Two	Egypt	90.05	12.33	4.715	0.000	13.4
		Saudi Arabia	78.72	8.45			
	Three	Egypt	94.75	10.29	4.180	0.000	6
		Saudi Arabia	77.92	9.42			
	Four	Egypt	92.75	17.56	3.691	0.000	9.9
		Saudi Arabia	77.05	7.32			
	Five	Egypt	94.67	7.74	4.508	0.000	3.7
		Saudi Arabia	69.75	11.69			
	Six	Egypt	97	14.27	4.154	0.001	3.7
		Saudi Arabia	73.40	8.06			
	Eight	Egypt	90.68	13.49	4.966	0.000	20.6
		Saudi Arabia	77.05	9.49			
Level of education	Bachelor	Egypt	92.39	13.94	10.914	0.000	82.6
		Saudi Arabia	77.38	9.18			
	Master	Egypt	99.67	11.06	4.876	0.000	7.2
		Saudi Arabia	75.88	7.71			
Working position	Frontline	Egypt	92.61	13.16	10.365	0.000	68
		Saudi Arabia	77.74	9.13			
	Second-line	Egypt	93.66	15.65	3.258	0.001	32
		Saudi Arabia	81.48	24.69			
Hospital associated with you	Primary	Egypt	92.66	14.01	9.504	0.000	65.3
		Saudi Arabia	77.88	9.82			
	Secondary	Egypt	93.18	11.34	5.009	0.000	13.9
		Saudi Arabia	77.38	8.29			
	Tertiary	Egypt	89.17	15.84	3.209	0.002	20.8
		Saudi Arabia	76.18	8.69			

Table (5) illustrated that there was a highly statistically significant relationship between life balance and age (24 years and below and 25-29 years), gender, physician occupation, marital status (single, married), employment status (full-time employee, Unemployed) living status, level of education, spent weeks in lock-down, working position, and primary and Secondary hospital among Egyptian and Saudi Arabia participants at p-value<0.01. However, there was a significant relationship between life balance and Tertiary hospital among Egyptian and Saudi Arabia participants at p- value< 0.05.

7. DISCUSSION

The coronavirus disease 2019 (COVID-19) pandemic creates a challenge to the life balance and wellbeing of health care professionals managing patients with COVID-19 worldwide (Gupta et al., 2021). The onset of the coronavirus disease 2019 (COVID-19) pandemic saw global reporting about frontline health workers, including doctors and nurses battling the virus. The coronavirus pandemic not only affects the physical health of health care professionals but also affects mental health and well-being (Creese et al., 2021). Therefore, the estimation of this psychological effect among health care professionals managing patients with COVID-19 is crucial in directing policies and interventions to maintain their psychological well-being.

As regards age, the present study revealed that nearly two-thirds of the studied samples were in the age group 24 years and below. This might be because this age is the age of working in words and health care professionals who are older have more administrative work. These results may be attributed to the fact that young individuals, as well as unmarried people, may suffer a higher level of psychological distress in the presence of a pandemic disease or a disaster that may threaten their life compared to others, as they may feel that they are still in the prime of life, they have more optimism and attachment in life, and they have not accomplished what is supposed to be accomplished; Therefore, they had felt more anxious and stressed than others as a result of the emerging COVID-19 disease and its health consequences on them. In addition, several explanations have been offered for the level of distress among young people including the stronger impact of the ban and lockdown on young people and access to a huge amount of information via social media.

These findings were in agreement with the study done by Mekonen et al., (2020) who assessed the

prevalence and associated factors of anxiety, depression, and stress among nurses working in referral hospitals and found that more than half of the samples were in the age group range of 25-29 years. In addition, Abdel Aziz et al., (2020) studied the predictive factors affecting stress among nurses providing care at COVID-19 isolation hospitals" and showed that the age group of nearly three-quarters of their participants was between 20-30 years old. Also, the current study showed that 76.2% were females because most of the sample were students from the faculty of nursing, most of them were female, and 6 % were physicians. Most of the samples were working in frontline positions and primary hospitals. From the researcher's point of view, health care professionals managing patients with COVID-19 in frontline positions, are more susceptible to stress, anxiety, and depression from the psychological pressure they are exposed to during Covid 19.

The current result confirmed that there was a highly statically difference in the mental health domains (anxiety, depression, behavioral control, psychological wellbeing, and total mental health domains). The mean score for anxiety, and depression (27.06 ±4.48, 16.77±4.21 respectively) were higher in the Saudi Arabia participants than in Egyptian participants (22.69±4.37, 9.24 ±3.14). From the researcher's point of view, this is because the number of Covid 19 cases in Saudi Arabia is more than the number of cases in Egypt. This result was supported by Misra-Hebert et al, (2020), who indicated that around 36.1% of Saudi Arabia health care professionals managing patients with COVID-19 worldwide suffered from depression and anxiety and 22.9% suffered from stress. In the same line, Wasim et al., (2020), in Pakistan, illustrated that there were symptoms of depression in 222(62.35%), anxiety in 227 (64.76%), the stress in 197 (55.33%), and insomnia in 190 (53.37%) of health care professionals managing patients with COVID-19.

Concerning the behavioral control and psychological well-being and total mental health domains, the findings of current research reflected that the mean score of behavioral control and psychological well-being, and total mental health domains (18.64±4.58, 45.49 ±6.56, 100.29±10.7 respectively) were lower in Egyptian participants than Saudi Arabia participants (33.00±6.14, 49.2843±7.35, 124.78±17.98). They indicated that the Covid 19 make more stress on Egyptian participants and decreased adaptation to infection, so, they had decreased behavioral control and psychological wellbeing. This result was justified by Gupta et al, (2021), who showed that the behavioral control and psychological well-being, and total mental health domains were lower in

health care professionals managing patients with COVID-19. In the same line, Johannes et al, (2021), found that COVID-19 has a considerable impact on the psychological well-being of front-line hospital staff. Consequently, health care professionals managing patients with COVID-19 may be at higher risk of adverse mental health outcomes during this pandemic. Moreover, a cross-sectional study conducted in Spain has found that the medical staff who worked with SARC-COV2 patients have shown emotional exhaustion and psychological symptoms more than the one who didn't work with SARC-COV patients. (Gago-Valiente et al., 2022)

Regarding the comparison of life balance among Egyptian and Saudi participants, the current study unexpectedly reported there was a highly statistical difference in the life balance among studied participants. The total mean score of life balance of Saudi Arabia studied participants was (102.12 ±26.79) while among Egyptian participants was (80.67± 25.79), despite the increased level of stress, depression, and anxiety among Saudi health professionals table (3) In Egypt, at that time, the absence of any definitive COVID-19 treatment or vaccine, lack of evidence about the effectiveness of a herd immunity strategy, the existence of more than one genotype of COVID-19, and expectation of a new wave of infections, can reflect negatively on healthcare professionals' psychological well-being (Youssef et al., 2020). Saudi Arabia had higher stress levels and role conflict and ambiguity than their counterparts who were working at regular primary healthcare centers. First, they are more likely to get infected with COVID-19 and consequently transmit the infection to their family, friends, and lovely ones. Second, they suffer a hefty workload that they must work for more hours and attend extra shifts. Third, the worldwide shortage of personal protective equipment had a stressful impact on the mental status of HCWs. Fourth, in many cases, HCWs had to take meticulous precautions while they examine patients, which adds extra psychological burdens in Saudi Arabia who are stressed due to managing COVID 19.

In Saudi Arabia, Also, a lower number of deaths than in Egypt. However, loss of behavioral and/or emotional control can be frequent at moments such as COVID-19. The government allocated resources from different ministries and governmental and non-governmental departments to stabilize the people's livelihood and comfort the domestic society and ensure information transparency (Alqahtani, et al., 2021). This result was congruent with Ayar et al., (2021), who reflected that there was a highly statical difference in the life balance among studied participants, and needs for mental health, work-life balance, work addiction, and the

need for mental health were affected during the COVID-19 pandemic. In the same line with Pattnaik, Rani, and Jitendra, (2021), reflected that Saudi Arabia indicated that 52.4% of nurses, particularly primary health care unit (PHCU) nurses, are dissatisfied with their quality of work-life and there was a highly statical difference in the life balance among studied participants from different nationality. This information could help to strengthen preparations for potential health care workers to aid team members, provide support for professional health teams during such crises (Covid19), especially for those working in high-risk locations, and could contribute to alleviating future psychiatric morbidity among HCWs. These findings could be due to the complexity of the nursing profession and female nurses also find it more difficult because they need to work at home as well as in the hospital. The already existing struggle to balance work and life among nurses is further complicated during this pandemic.

On other hand, Kumari et al., (2020), found that only 27.7% of the health care professionals managing patients with COVID-19 had very good work-life balance, 30.9% of them had good work-life balance, 26.4% of them had average work-life balance and remaining 15% of them had poor work-life balance. The differences could be connected to divergence in the cultural environment as the reported studies were done in different nations and could be due to the various instruments used for gathering the data.

Regarding the relation between socio-demographic characteristics and mental health among Egyptian and Saudi participants. The results of the current study revealed that there was a statistically significant relationship between mental health and age among Egyptian and Saudi Arabia participants at p- value<0.01. This may be due to the younger age of the studied sample and lack of experience and lack of adaptation to infectious diseases. This is possible with increasing age, tend to become more mature and confident in handling crises at home and work. This result was consistent with Kumari et al., (2020), who reported that there was a relationship between age and mental health among the studied sample (p = 0.001). This result was incongruent with Ibrahim et al, (2020), who reported that there was no significant relationship between age and mental health among the studied sample. Additionally, this study disagreed with Al-Dossary et al., (2020) whose study entitled Nurses' demographic information, awareness, attitudes, prevention, and perceptions of COVID-19 during the outbreak in Saudi Arabia, who reported that there was no significant relationship between age and the mental health among studied sample.

Additionally, the current study showed that there was a highly statistically significant relationship between mental health and level of education, and primary hospital among Egyptian and Saudi Arabia participants at p- value>0.01. This result was in the same direction as Elkayal, Shahin, and Hussien et al, (2018), who reported a relation between mental health and level of education, and primary hospitals in the studied sample. These findings could be explained by the high level of awareness of people with higher education, which results in more distress. On the same line, Shrestha et al., (2020), reported that the education level and the income level had an inverse correlation with the level of psychological stress of the studied sample.

Regarding the relationship between Socio-demographic characteristics and life balance among studied participants. The finding of the current research reflected that there was a highly statistically significant relationship between life balance and age (24 years and below and 25-29 years and primary and Secondary hospitals among Egyptian and Saudi Arabia participants at p-value>0.01. This might be related to that when the age increase or with high educational level and more attendance in training courses, nurses learn new strategies to deal with these psychosocial problems. Along the same line, E Wu, et al., (2020), assessed the psychological impact of COVID-19 on healthcare workers and found a statistically significant relationship between life balance and age and primary and secondary hospitals in the studied sample. Conversely, this result disagreed with a study done by 16-Krishnamoorthy et al., (2020) who found no significant relationship between life balance and age among the studied sample. This may be related to different sample sizes and different cultures.

Additionally, the current study revealed that there was a significant relationship between life balance and tertiary hospital among Egyptian and Saudi Arabia participants at p- value< 0.05. In the same line, Maia et al., (2021), studied mental health outcomes of healthcare providers during the COVID-19 pandemic in Saudi Arabia they concluded that there was a significant relationship between life balance and tertiary hospital among Saudi Arabia participants at p- value< 0.00. The above finding was in harmony with, Misra-Hebert et al, (2020), who indicated that hat there was a significant relationship between life balance and tertiary hospital among studied participants. This is because in tertiary care hospitals the number of cases is more than others in other hospitals. This might be due to stressful and constrained conditions where they are exposed to the constant threat of infection and fear of transmission of infection to their family.

8. CONCLUSION:

The COVID-19 outbreak has a significant impact on the work-life balance and mental health well-being of health care professionals managing patients with COVID-19. A considerable proportion of health care professionals reported symptoms of depression, anxiety, and stress. Nurses and other healthcare providers working on the frontline who were directly treating patients with COVID-19 are at increased risk of severe depression, anxiety, and distress. Additionally, there was a significant relationship between life balance and tertiary hospital among Egyptian and Saudi Arabia participants. The mean score for life balance, behavioral control, psychological well-being, and total mental health domains was lower in Egyptian than Saudi Arabia health care professionals. The mean score for anxiety and depression was higher in the Saudi Arabia participants than in Egyptian participants. Also, the mean score for behavioral control and psychological well-being, and total mental health domains were lower in Egyptian participants than in Saudi Arabia participants. An extensive rapid psychological intervention to promote mental well-being targeting this population needs to be implemented.

9. RECOMMENDATIONS:
- A lot of specialized clinics should be established to support the mental health of health care professionals during pandemics.
- It is important to pay attention to health care professionals managing patients with COVID-19 psychological health status while fulfilling their responsibilities.
- The Egyptian government needs to devote more attention to community-based campaigns for screening and early detection of infected cases.
- However, that will not be achieved without sufficient and well-established laboratory infrastructures in all regions
- A rehabilitation program should be initiated to restore the community function and the well-being of individuals who have been impacted by the COVID-19 pandemic.
- A wellness program should be developed as well as training the health care workers on positive coping strategies which can help them to deal with psychological stress. Therefore, collective efforts from all people working in both settings are urgently required to maintain the safety of the nurses and patients affected by Covid19.

10. IMPLICATIONS FOR NURSING PRACTICE

The following implications are suggested:
- Future studies should address the causes of challenges, and strengths and weaknesses of the healthcare system in dealing with the Covid19 pandemic.
- Health care professionals managing patients with COVID-19 should give special attention to their psychological health by providing them opportunities to discuss the stress they are experiencing, support one another, and make suggestions for workplace adaptations during this pandemic.
- It is also, suggested that future research should address the lived experiences of changes in the performance and behaviors of care providers who care for COVID-19 patients. Consequently, improvements and interventions may be made available to help healthcare personnel maintain nurses' psychological health, safety, and well-being.
- Provide opportunities for health care professionals managing patients with COVID-19 to discuss the stress, recognize its sources, and make suggestions for workplace adaptations during this pandemic.

11. ACKNOWLEDGEMENTS

12. AUTHORS' CONTRIBUTION

Prof Amal Khalil: initiated the idea of the research and design, and writing methodology, shared in data collection and writing results, did a review of the whole manuscript (editing and paraphrasing), and formatted the manuscript for publication submission. Ms. Manar Sager shared in initiated research idea, wrote the introduction and significance of the study, and transferred tools into a google form. Dr. Hanaa Radwan shared in data collection {Egyptian} and wrote comments on tables. Dr. Eman Shoker wrote a discussion, conclusion, and recommendations.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest regarding the publication of this paper.

REFERENCES

[1]. Abdel Aziz, S. A., Mohamed. A., Karawan, S. G., Abboud, A. H. & Ahmed Abdel-Kader, F. (2020). Predictive factors affecting stress among nurses providing care at COVID-19 isolation hospitals in Egypt Nursing Open. 2021; 8:498–505. https://doi.org/10.1002/ nop2.652

[2]. Al-Dossary, R., Alamri, M., Albaqawi, H., Al Hosis, K., Aljeldah, M., Aljohan, M., Aljohani, K., Almadani, N., Alrasheadi, B., Falatah, R., & Almazan, J. (2020). Awareness, Attitudes, Prevention, and Perceptions of COVID-19 Outbreak among Nurses in Saudi Arabia. International Journal of Environmental Research and Public Health, 17, pp. 8269

[3]. Alkhamees, A. A., Alrashed, S. A., Alzunaydi, A. A., Almohimeed, A. S., & Aljohani, M. S. (2020). The psychological impact of the COVID-19 pandemic on the general population of Saudi Arabia. *Comprehensive Psychiatry*, *102*, 152192.

[4]. Alqahtani A, A Alqahtani S, Alhodaib A, Daoulah A, Mobarad M. (2021). Psychological and social wellbeing of paramedics in Riyadh City during the COVID-19 pandemic. Australasian Journal of Paramedicine: 2021;18. https://doi.org/10.33151/ajp.18.895.

[5]. Ayar D, Mehmet A, and Karaman R. (2021). Work-Life Balance and Mental Health Needs of Health Professionals During COVID-19 Pandemic in Turkey. Int J Ment Health Addict. 2021 Nov 24: 1–17. DOI: 10.1007/s11469-021-00717-6 .

[6]. Basak, S. (2021). Factors affecting the work-life balance of women in Bangladesh: a study during COVID-19 pandemic. Canadian Journal of Business and Information Studies, 3(3), 38-48.

[7]. Bettinsoli, M. L., Di Riso, D., Napier, J. L., Moretti, L., Bettinsoli, P., Delmedico, M., ... & Moretti, B. (2020). Mental Health Conditions of Italian Healthcare Professionals during the COVID-19 Disease Outbreak. *Applied Psychology: Health and Well-Being*, *12*(4), 1054-1073.

[8]. Choi, E., & Kim, J. (2017). The association between work-life balance and health status among Korean workers. Work, 58(4), 509-517.

[9]. Creese J, Paul Byrne J, Conway E, Barrett E, Prihodova L and Humphries N. (2021) We All Need to just Take a Breath": Composite Narratives of Hospital Doctors' Well-Being

[10]. Denning, M., Goh, E. T., Tan, B., Kanneganti, A., Almonte, M., Scott, A., ... & Kinross, J. (2021). Determinants of burnout and other aspects of psychological well-being in healthcare workers during the COVID-19 pandemic: a multinational cross-sectional study. *PloS one*, *16*(4), e0238666.

[11]. E Wu P , Styra R , L Gold . (2020). Mitigating the psychological effects of COVID-19 on health care workers. 27;192(17): E459-E460. DOI: 10.1503/cmaj.200519. Epub 2020 Apr 15.

[12]. Elkayal M, Shahin M, and Hussien R. (2022). Psychological distress related to the emerging COVID-19 pandemic and coping strategies among the general population in Egypt. J Egypt Public Health Assoc. 2022 Dec; 97: Published online. DOI: 10.1186/s42506-021-00100-2.

[13]. El-Zoghby, S. M., Soltan, E. M., & Salama, H. M. (2020). Impact of the COVID-19 pandemic on mental health and social support among adult Egyptians. *Journal of community health*, *45*, 689-695.

[14]. Friedman, Ph.D. 2016 Foundation for Well-Being 610- 828-4674.Copyright (c) Philip H.

[15]. Gago-Valiente, F. J., Moreno-Sánchez, E., Santiago-Sánchez, A., Gómez-Asencio, D., Merino-Godoy, M. D. L. Á., Castillo-Viera, E., ... & Mendoza-Sierra, M. I. (2022). Work-Family Interaction, Self-Perceived Mental Health and Burnout in Specialized Physicians of Huelva (Spain): A Study Conducted during the SARS-CoV-2 Pandemic. International journal of environmental research and public health, 19(6), 3717.

[16]. Gupta N, Dhamija S, Patil J, and Chaudhari B. (2021). Impact of COVID-19 pandemic on healthcare workers. Ind Psychiatry J. 2021 Oct; 30(Suppl 1): S282–S284. DOI: 10.4103/0972-6748.328830.

[17]. Hsu, Y. Y., Bai, C. H., Yang, C. M., Huang, Y. C., Lin, T. T., & Lin, C. H. (2019). Long hours' effects on work-life balance and satisfaction. BioMed research international, 2019.

[18]. Ibrahim A, Osman O and Ahmed F. (2022). Effect of COVID-19 on Psychological Status among Nurses Working at Isolation Hospital. Journal of Nursing Science - Benha University ISSN 2682 – 3934 Vol. (3) No. (1) 2022.

[19]. Johannes H, Ann Latham H, Stephen J, Grindle M, Anne Munoz S, Ellis L,and

Christopher M. (2021). A rapid review of the impact of COVID-19 on the mental health of healthcare workers: implications for supporting psychological well-being. BMC Public Health, 21:104. https://doi.org/10.1186/s12889-020-10070-3

[20]. Kang, L., Li, Y., & Hu, S. (2020). The mental health of medical workers in Wuhan, China dealing with the 2019 novel coronavirus. Lancet Psychiatry; 7(3): e14. Doi: 10.1016/S2215-0366(20)30047X.

[21]. Khalil A., (2020) Prevalence of Mental Disorders and the Pandemic of COVID-19: A Contemporary Literature Review , Journal of Biomedical Research 5(9) DOI: 10.36348/sjbr.2020.v05i09.001

[22]. Khanal, P., Devkota, N., Dahal, M., Paudel, K., & Joshi, D. (2020). Mental health impacts among health workers during COVID-19 in a low resource setting: a cross-sectional survey from Nepal. Globalization and health, 16(1), 1-12.

[23]. Krishnamoorthy, Y., Nagarajan, R., Saya, K., & Menon, V. (2020). Prevalence of psychological morbidities among the general population, healthcare workers and COVID19 patients amidst the COVID-19 pandemic: A systematic review and meta-analysis, Psychiatry Research, Vol .293 (no.23), Pp.: 35-37.

[24]. Kumari A, Lee P, Raju H, Rebekah G, Sheela Durai and Durai S. (2021). Work-life Balance of Nurses. during Pandemic. IOSR Journal of Nursing and Health Science (IOSR-JNHS) e-ISSN: 2320–1959.p- ISSN: 2320–1940 Volume 9, Issue 6 Ser. I (Nov. – Dec. 2020), PP 45-48.

[25]. Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N, Wu J, Du H, Chen T, Li R, Tan H, Kang L, Yao L, Huang M, Wang H, Wang G, Liu Z, Hu S. Factors Associated With Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019. JAMA Netw Open. 2020 Mar 2;3(3):e203976. doi:10.1001/jamanetworkopen.2020.3976. PMID: 32202646; PMCID: PMC7090843.

[26]. Lasalvia, A., Amaddeo, F., Porru, S., Carta, A., Tardivo, S., Bovo, C., ... & Bonetto, C. (2021). Levels of burnout among healthcare workers during the COVID-19 pandemic and their associated factors: a cross-sectional study in a tertiary hospital of a highly burdened area of northeast Italy. BMJ Open, 11(1), e045127.

[27]. Maia J, Brazil B, Goncalves P, Medical C, Abdel-Daim, Almutairi K, Alhurishi SA, Almutairi M, Vinluan JM, Aboshaiqah AE and Marie MA (2021) Mental Health Outcomes of Healthcare Providers During COVID-19 Pandemic in Saudi Arabia: A Cross-Sectional Study. Frontiers in Public Health, www.frontiersin.org Volume 9 | Doi: 10.3389/fpubh.2021.625523

[28]. Matulevicius, S. A., Kho, K. A., Reisch, J., & Yin, H. (2021). Academic medicine faculty perceptions of work-life balance before and since the COVID-19 pandemic. JAMA network open, 4(6), e2113539-e2113539.

[29]. Mekonen, E., Shetie, B., & Muluneh, N. (2020). The Psychological Impact of COVID- 19 Outbreak on Nurses Working in the Northwest of Amhara Regional State Referral Hospitals, Northwest Ethiopia. Psychology Research and Behavior Management Journal, 13, pp. 1353–1364 https://doi.org/10.2147/PRBM.S291446.

[30]. Pattnaik T, Rani S, and Jitendra M. (2021). Work-Life Balance of Health Care Workers in the New Normal: A Review of Literature. J. Med. Chem. Sci., 2022, 5(1) 42-54.DOI: 10.26655/JMCHEMSCI.2022.1.6

[31]. Perez-Arce F, Angrisani M, Bennett D, Darling J, Kapteyn A, Thomas K (2021) COVID-19 vaccines and mental distress. PLoS ONE 16(9): e0256406. https://doi.org/10.1371/journal.pone.0256406

[32]. Shrestha DB, Thapa BB, Katuwal N, Shrestha B, Pant C, Basnet B, Mandal P, Gurung A, Agrawal A, Rouniyar R. Psychological distress in Nepalese residents during COVID-19 pandemic: a community-level survey. BMC Psychiatry. 2020;20(1):491–498. DOI: 10.1186/s12888-020-02904-[PMC free article] [PubMed] [CrossRef] [Google Scholar].

[33]. Spoorthy, M. S., Pratapa, S. K., & Mahant, S. (2020). Mental health problems faced by healthcare workers due to the COVID-19 pandemic–A review. Asian journal of psychiatry, 51, 102119.

[34]. Spoorthy, M. S., Pratapa, S. K., & Mahant, S. (2020). Mental health problems faced by healthcare workers due to the COVID-19 pandemic–A review. Asian journal of psychiatry, 51, 102119.

[35]. Wańkowicz, P., Szylińska, A., & Rotter, I. (2020). Assessment of mental health factors among health professionals depending on their contact with COVID-19 patients. International Journal of Environmental Research and Public Health, 17(16), 5849.

[36]. Wasim T, Gul G, Bushra N, and Riaz A. (2020). Effect of COVID-19 Pandemic on Mental Wellbeing of Healthcare Workers in Tertiary Care Hospital. Cureus, 26 Special Issue | 2020 | Page 140. Available from: https://www.researchgate.net/publication/343222483

[37]. WHO, 2020 retrieved from: https://www.who.int/news/item/05-10-2020-covid-19-disrupting-mental-health-services-in-most-countries-who-survey

[38]. World Health Organization. (2021, October). Coronavirus cases. Retrieved from: https://www.worldometers.info/coronavirus/country/saudi-arabia/

[39]. Wu T, Jia X, Shi H, Niu J, Yin X, Xie J, Wang X. Prevalence of mental health problems during the COVID-19 pandemic: A systematic review and meta-analysis. J Affect Disord. 2021 Feb 15;281:91-98. doi: 10.1016/j.jad.2020.11.117. Epub 2020 Dec 3. PMID: 33310451; PMCID: PMC7710473.

[40]. Yayla, A., & Eskici İlgin, V. (2021). The relationship of nurses' psychological well-being with their coronaphobia and work-life balance during the COVID-19 pandemic: A cross-sectional study. Journal of clinical nursing, 30(21-22), 3153-3162.

[41]. Youssef N, Mostafa A, Ezzat R, Yosef M and El Kassas M. (2020). Mental health status of healthcare professionals working in quarantine and non-quarantine Egyptian hospitals during the COVID-19 pandemic. East Mediterr Health J. 2020;26(10). https://doi.org/10.26719/emhj.20.116

[42]. Zalat M, Mosleh H, Alghamdi K, Khan A, and Abdallah A. (2021). Psychological Disorders among Healthcare Workers in Saudi Arabia during COVID-19 Pandemic: A Cross-Sectional Study. Marwa Zalat, et al Psychological disorders among healthcare workers in Saudi Arabia. The Egyptian Journal of Community Medicine Vol. 39 No. 3 July 2021. https://ejcm.journals.ekb.eg/article_187672_9ac3e974329798760f555ae082186c95.pdf .