Impact of the COVID-19 Pandemic on the Mental Health of Midwives: North of Jordan

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Abstract

This study was conducted to determine midwives' psychological impact levels of the COVID-19 pandemic related to uncertainty, fear, emotional exhaustion, anxiety, and depression. The majority of midwives had mild to moderate levels of anxiety 170 (43.7%), about half of participants had high emotional exhaustion 197 (50.6%), mild depression 177 (45.5%), moderate worry 178 (45.8%), and mild to moderate fear 239 (61.4%). Working in a hospital, low income, increased workload, insufficient protection equipment, and the presence of disease among parents and relatives were independent risk factors for anxiety and emotional exhaustion. Moreover, low educational level working in a hospital, increased duty hours, low income, increased workload, and pregnancy were independent risk factors for depression. In addition, increased duty hours contributed as a worry independent risk factor. At the same time, independent risk factors of fear were Increased duty hours, insufficient protective equipment, and pregnancy. The COVID-19 pandemic has induced anxiety, emotional exhaustion, depression, worry, and fear among midwives. Psychological intervention for midwives needs special attention to prevent, alleviate or treat psychological impact.

Keywords

anxiety;
COVID-19;
depression;
education;
emotional exhaustion;
fear;
health;
midwives;
psychological impact;
worry;

Contents

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1 Introduction

At the end of December 2019, the world faced an infectious disease caused by a newly discovered virus known as Coronavirus (COVID-19). The speed and aggressiveness of COVID-19 infecting people have made it a serious and threatening global health problem (Shahrour & Dardas, 2020). Early studies reported that healthcare workers' infection rates ranged from 3.8% to 63% (Wu & McGoogan, 2020). Therefore, medical health care workers are considered a vulnerable group to physical and psychological morbidity (Aksoy & Koçak, 2020; Corbett et al., 2020; Shahrour & Dardas, 2020; Vafaei et al., 2020). In addition, nurses and midwives may face social isolation and discrimination due to their work roles. Therefore, they emerge as a sensitive group against complex emotional reactions and psychological distress (Aksoy & Koçak, 2020). For example, according to the survey conducted in Hubei Province that fought COVID-19 within two weeks among the first batch of clinical first-line support nurses, 92.68% of the nurses developed psychological problems (Guixia & Hui, 2020).

Women continue to give birth, which is usually a time of joy, but it can also be associated with increased anxiety and increased risk of well-being disturbances during pregnancy and after birth (Wilson et al., 2021). Maternity service providers (including doctors, midwives, nurses, and allied health staff) must continue their core business in caring for and supporting women, newborns, and their families, while also adapting to a rapidly changing health system environment due to COVID-19 (Wilson et al., 2021). Managing an infectious disease outbreak is an unusual event for midwives, and they may be burdened by the pressure of managing the regular care of pregnant women and couples and all their worries about the COVID-19 pandemic and its consequences (Wilson et al., 2021).

Health care workers are every country's most valuable resource, and midwives must be supported to provide the best quality care to women and newborns in exceptionally wearisome circumstances (Wilson et al., 2021). Therefore, thinking about the needs of midwives to prevent stress and burnout is essential. In addition, emotional and psychological support must be available throughout the response.

The core philosophies of midwifery include shared decision-making (American College of Nurse-Midwives, 2016), a process in which a trusting relationship between patients and providers is a crucial component (Molenaar et al., 2018). Both the midwife's role as a patient advocate and team member prioritize relationships between the midwife and the individuals they serve. Most research on the effects of the COVID-19 pandemic on health care providers has focused on the effects on emergency departments and intensive care staff. However, the nature of perinatal care and the emerging evidence of pregnancy-specific sequelae of COVID-19 also call attention to midwives' specific needs (Lokken et al., 2020).

Midwifery is a highly relational health profession. Pregnant people's expectations of birth as a family and personal life event rather than illness emphasize the importance of interactions with and emotional support from caregivers, including midwives (Lyndon et al., 2017). Birth outcomes are improved for laboring people with continuous support (Neerland et al., 2019), which incentivizes midwives and facilities to encourage that support. The rapid and ever-changing policies of the COVID-19 pandemic have profoundly interrupted these professional norms, creating confusion and loss for midwives and patients alike. In turn, this confusion and uncertainty carried the potential for relational disruption between midwives and patients and midwives and the systems in which they work. Relationships become difficult to maintain if health care providers, like anyone, do not know who or what to trust.

This study's findings will significantly benefit policymakers considering the focus on maternity care providers, mainly midwives. This study focused on maternity care providers in Jordan and provided an overview of essential considerations in supporting their emotional, mental, and physical health needs in the unique and unprecedented crisis that COVID-19 presents. Therefore, this study aimed to assess midwives' fear, anxiety, depression, emotional exhaustion, and worry during the COVID-19 pandemic.

2 Materials and Methods

Study design

The research is planned in a cross-sectional descriptive-explorative type. Research question: What are the levels of uncertainty, fear, emotional exhaustion, anxiety, and depression among midwives due to the COVID-19 outbreak? A questionnaire form was shared anonymous online survey using Google forms for two weeks (between December 25, 2020, to January 7, 2021) to collect data from governmental maternal-child health centers or maternal hospitals. At the end of two weeks, it was determined that 389 midwives completed the questionnaire. The data were examined; the faulty and incomplete ones were removed.

Participants

The accessible population was midwives working at the governmental maternity hospitals and Maternal Child Health Centers (MCH) centers in north Jordan. Therefore, the inclusion criteria were all midwives working in primary health care centers and maternal hospitals in north Jordan, regardless of their academic preparation, age, gender, and nationality. The sample size was calculated using the rule of thumb formula, which adds fifteen to twenty participants for each variable plus twenty percent to reduce the withdrawal rate (variables number*20+20%) (Van Voorhis & Morgan, 2007). the sample was randomly selected from the population of the study.

Data collection

Questionnaire forms of the data were collected online, using Google Forms. Midwives were included in the study between December 25, 2020, to January 7, 2021) by using the convenience sampling method. A structured English language questionnaire was used. The questionnaire consisted of two parts; part one was demographic data and was developed to elicit background information for participants and assess sociodemographic and personal differences. The second part of the questionnaire related to anxiety, burnout, depression, worry, and fear consists of five tools

     Personal Information Form, State and Trait Anxiety Inventory, and Intolerance of Uncertainty Scale were used as data collection tools. An online questionnaire link was shared through social media tools (such as Whatsapp, Instagram, and Facebook), information was provided about the research, and midwives were invited to fill in the questionnaire. The questionnaire link was sent to online professional groups to which midwives are joined. The data of the research were collected based on self-report. While creating the online form, the midwives made standardizations to respond once, only one response for each participant. Therefore, only one response was provided to the surveyed midwives. The collected questionnaires were checked daily, and quality control was made. Social media research can present various challenges or opportunities regarding research validity and reliability. While social media researchers have difficulties with users not having existing accounts, it is easy to access critical data when it is challenging to collect face-to-face data, such as in the COVID-19 outbreak. Social media users do not represent the entire population. However, it can turn into an opportunity when it is made with a   particular group, such as midwives (Ruths & Pfeffer, 2014; Social Media Research Group, 2016).

Measure

A structured English language questionnaire was used. The questionnaire consisted of two parts; part one was demographic data and was developed to elicit background information for participants and assess sociodemographic and personal differences. The second part of the questionnaire related to anxiety, burnout, depression, worry, and fear consists of five tools: Hamilton Anxiety Rating Scale (HAM-A) was used to evaluate the severity of anxiety symptoms. Fourteen items are present in HAM-A with a five-point Likert scale. The HAM-A score in practice is rated as follows: no anxiety (score 0-6), mild and moderate anxiety (score 7-13), severe anxiety (score>=14) (Chen et al., 2020; Zhang et al., 2020). The Maslach Burnout Inventory (MBI) mainly measures the emotional response resulting from excessive work stress, and it comprises nine items. The overall

score ranges from 0 to 54 points, 19 to 26 points are moderate emotional exhaustion, and above 26 points are high emotional exhaustion. Finally, Hamilton Depression Rating Scale (HDRS) was used to assess the severity of depression. The scale comprises a 21-item version. The overall score for HDRS-21 can be classified as 5-point items: (0-6) no depression, (7-13) mild and moderate, and a score more than or equal to 24 was severe depression. The Penn Worry Questionnaire (PSWQ) was used to measure the trait of worry using the Likert rating scale. It comprises 16-item scores that vary from 6-to 80, with a higher score representing a greater degree of pathological worry. Finally, The Numeric Rating Scale (NRS) was used to measure the level of fear. The fear score is reflected using 0-10 points, and the scale details are as follows: No fear 1-3, moderate fear 4-6, severe fear 7-9, extreme fear ten, and psychological anxiety.

Human subjects protection

Ethical approvals were obtained from the Institutional Review Board (IRB) at the Jordan University of Science & Technology (JUST). Also, the Ministry of Health and hospital-specific IRB committee's approval was assured before data collection. Information about this study was disseminated throughout the invitation process. An introductory letter containing information about the research team and a brief description of the proposed study, including procedures and purposes, was posted at the beginning of the survey. The letter also addresses ethical concerns such as anonymity, confidentiality, and protecting human subjects. The potential midwives' respondents will be asked to complete an online survey.

Statistical analysis

The data were analyzed using the Statistical Package for Social Sciences (SPSS) software (Version 26.0). The descriptive statistics were used to describe the sample demographics and midwives' responses regarding anxiety, depression, worry, uncertainty, fear, and emotional exhaustion. A Chi-square of independent variables was used to measure the association between the demographic data and anxiety, depression, worry, uncertainty, fear, and emotional exhaustion.

3 Results and Discussions

Descriptive statistics

The participant's midwives were all females. The highest midwives' age percentage was (44.5%) for aged "30-39 years". The majority of midwives were married (n = 297, 76.3%). Approximately half of the participants, 211 (54.2%), had a diploma degree in midwifery, while 154 (39.6%) of the participants had a Bachelor's degree, and 24 (6.2%) of them finished a master's degree. About 154 (39.6%) of midwives' participants clocked more than ten years of work experience, 144 (37.0%) between 3 and 10 years, and 91 (23.4%) up to 3 years. Most midwives worked at Maternal hospitals 246 (63.2%), while others worked at Primary Health Care Center 143 (36.8%). For the working hours, most of the midwives' participants, 210 (54%), worked for eight hours, 109 (28%) participants worked 16 hours, and 70 (18%) worked less than eight hours. Income for the midwives varied; about half, 193 (49.6%) of the midwives' participants received a monthly amount of 301 – 500 JD, 73 (18.8%) received 300 JD, 93 (23.9%) received 501-700 JD, and only 30 (7.7%) received 701-900JD. Most of the midwives' participants, 206 (53%), raised two or more children, while 113 (29%) did not have children, and almost 70 (18%) had one child. Regarding workload during the COVID-19 outbreak, nearly a quarter of the midwives' participants, 106 (27.2%), reported that their workload did not increase, and the remaining 283 respondents (72.8%) reported increased workload hours during the outbreak.

Table 1
Frequency and percentage for the midwife's participants according to study personal variables (n=389)

Variable	Category	n	%
Age	23-29 years	147	37.8
	30-39 years	173	44.5
	40-49 years	69	17.7
	Total	389	100.0
Educational Level	Diploma	211	54.2
	Bachelors	154	39.6
	Master	24	6.2
	Total	389	100.0
Total work experience (Years)	0-3	91	23.4
	3-10	144	37.0
	>10	154	39.6
	Total	389	100.0
Workplace	Hospital	246	63.2
	Primary Health Care Centers	143	36.8
	Total	389	100.0
Duty hours per day	< 8 hours	70	18.0
	8 hours	210	54.0
	16 hours	109	28.0
	Total	389	100.0
Monthly income	300	73	18.8
	301 -500	193	49.6
	501 – 700	93	23.9
	701 – 900	30	7.7
	Total	389	100.0
Marital status	Single	92	23.7
	Married	297	76.3
	Total	389	100.0
Number of children	No children	113	29.0
	One child	70	18.0
	Two or more children	206	53.0
	Total	389	100.0
Increase in workload during the outbreak	No	106	27.2
	Yes	283	72.8
	Total	389	100.0
Protective equipment in workplace availability (PPE)	Adequate	172	44.2
	Insufficient	217	55.8
	Total	389	100
Are you pregnant?	No	350	90.0
	Yes	39	10.0
	Total	389	100
Are you lactating?	No	353	90.7
	Yes	36	9.3
	Total	389	100.0
Presence of chronic diseases	No	330	84.8
	Yes	59	15.2
	Total	389	100.0
Presence of chronic disease among parents or relatives	No	196	50.4
	Yes	193	49.6
	Total	389	100.0

Regarding using PPE protective equipment at the workplace, almost 172 (44.2%) stated it was adequate, while 217 (55.8%) stated that it was not adequate equipment. In addition, most midwives' participants were not pregnant 350 (90%) at the first COVID-19 wave. However, 39 (10.0%) reported pregnancy. Also, most midwives did not breastfeed 353 (90.7%), while (9.3%) of the midwives did breastfeed.

Moreover, for chronic disease, the data showed that 330(84.8%) did not report any chronic disease, while 59 (15.2) reported having a chronic illness. About 196 (50.4%) reported no chronic illness regarding chronic disease among midwives' parents or relatives. However, 193 (49.6) reported chronic illness. Table (1) shows the frequencies and percentage of midwives' participants' characteristics.

Participants scale scores

The data shows the descriptive analysis of the anxiety scale, in which the majority of the participants, 170 (43.7%), reported mild to moderate levels of anxiety symptoms, about 134 (36.8%) showed severe anxiety, whereas 76 (19.5%) of the participants revealed no anxiety Table (2). Moreover, the results reveal that 197 (50.6%) about half of the participants had high emotional exhaustion, 162 (41.6%) had not experienced any emotional exhaustion, and 30 (7.7%) had moderate emotional exhaustion Table (3). Depression scores among midwives at the time of the COVID-19 pandemic are shown in Table (4), showing that 177 (45.5%) had mild depression, 66 (17.0%) had moderate depression, and only 30 (7.7%) of participants had a severe level of depression.

Table 2
Frequencies and percentage of anxiety levels among midwives

Anxiety categories	Frequency	Percentage (%)
No anxiety (0-6)	76	19.5
Mild to Moderate anxiety (7-13)	170	43.7
Severe anxiety (>14)	134	36.8
Total	389	100.0

Table 3
Frequencies and percentage of emotional exhaustion levels among midwives

Burnout categories	Frequency	Percentage (%)
No emotional exhaustion burnout	162	41.6
Moderate emotional exhaustion burnout	30	7.7
High emotional exhaustion burnout	197	50.6
Total	389	100.0

Table 4
Frequencies and percentage of depression levels among midwives

Depression categories	Frequency (N)	Percentage (%)
No depression	116	29.8
Mild depression	177	45.5
Moderate depression	66	17.0
Severe depression	30	7.7
Total	389	100.0

Moreover, Worry scores among midwives at the time of the OVID-19 pandemic are presented in Table (5). The results showed that approximately half of the participants, 178 (45.8%), reported a moderate tendency to worry, 110 (28.3) participants reported a high tendency to worry, and 101 (26.0%) reported a low tendency to worry. Concerning the Fear scores, Table (6) showed that the majority of the participants, 239 (61.4%), experienced

mild to moderate fear levels, whereas 128 (32.9%) of the participants had severe to extreme fear, 22 (5.7 %) had moderate stress, 2.5% had severe stress, and only 1.5% had an extremely severe level of no fear.

Table 5
Frequencies and percentage of worry levels among midwives

Worries categories	Frequency (N)	Percentage (%)
Low worries	101	26.0
Moderate worries	178	45.8
High worries	110	28.3
Total	389	100.0

Table 6
Frequencies and percentage of fear levels among midwives

Fear categories	Frequency (N)	Percentage (%)
No fear (zero)	22	5.7
Mild to Moderate fear (1-6)	239	61.4
Sever to extreme fear (7-10)	128	32.9
Total	389	100.0

Association of the scale scores of the participants with the variables

A Chi-square test was performed to find the association between anxiety, burnout, depression, fear, worry, and midwife's sociodemographic and personal characteristics. The current study showed statistically significant associations between anxiety, burnout, depression, fear, worry, and age (p<0.01). In addition, midwives with a basic educational level (Diploma) showed statistically higher levels of depression when compared to midwives with higher educational levels (p=0.004). Moreover, the risk of anxiety and depression was significantly higher in midwives working in maternity hospitals (p = 0.003, p = 0.001), respectively, than in midwives working in primary health care centers. In addition, a significant association was found between duty hours and burnout, depression, worry, and fear (p≤0.001, p= 0.001, p= 0.004, and p=0.019), respectively. Finally, the results showed a significant association between income and anxiety, burnout, and depression (p=.009, p≤.001, p ≤.001).

Table 7
Association between demographic characteristics and factors associated with anxiety

Independent variables	N (%) No anxiety	N (%) Mild to moderate anxiety	N (%) Severe anxiety	Df	X² p-value)
Age group				4	0.026*
23-29 years	39(26.5)	66(44.9)	42(28.6)		
30-39 years	25(14.5)	73(42.2)	75(43.4)		
40-49 years	12(17.6)	31(44.9)	26(37.7)		
Workplace				2	0.003**
Primary health care center	20(14.4)	78(54.5)	45(31.5)		
Maternity Hospital	56 (22.8)	92(37.4)	98(39.8)		
Income				6	0.009**
300	16(21.9)	38(62.1)			
301-500	37(19.2)	68(44.8)			
501-700	13(14.0)	42(45.2)			

701-900	10(33.3)	4(13.3)			
Protective equipment				2	0.043*
Insufficient	35(16.1)	105(48.8)	76(35.0)		
Adequate	41(43.8)	64(37.2)	67(39.0)		
Increase in workload				2	0.041*
No	19(17.9)	57(53.8)	30(28.3)		
Yes	57(20.1)	113(39.9)	113(39.9)		
Presence of chronic disease				2	0.048*
No	68(20.6)	149(45.2)	113(34.2)		
Yes	8(13.3)	21(35.6)	30(50.8)		
Presence of chronic disease among parents or relatives				2	0.006**
No	104(53.1)	57(29.1)	35(17.9)		
Yes	74(38.3)	63(32.5)	56(29.0)		

** p≤0.01   *p≤0.05

There are statistically significant associations in the level of anxiety, burnout, and depression among midwives during the COVID-19 pandemic. Attributed to increased workload (p=0.041, p=0.033, p=0.011) respectively. Inadequate protective equipment (PPE) was significantly associated with mild to moderate anxiety and fear and significant associations with a high level of burnout and fear (p=0.043, p=0.014, p=0.001).

Table 8
Association between demographic characteristics and factors associated with burnout

Independent variables	N (%) No burnout	N (%) Moderate burnout	N (%) High burnout	Df	X^2 (p-value)
Age group				4	0.000**
23-29 years	122(83.0)	6(4.1)	19(12.9)		
30-39 years	34(19.7)	102(59.0)	37(21.4)		
40-49 years	24(34.8)	14(20.3)	31(44.9)		
Duty hours				4	0.000**
Less than 8	25(35.7)	30(42.9)	15(21.4)		
8 hours	93(44.3)	84(40.0)	33(15.7)		
16 hours	26(23.9)	43(39.4)	40(36.7)		
Income				6	0.000**
300	59(80.0)	8(11.0)	6(8.2)		
301-500	83(43.0)	64(33.2)	46(23.8)		
501-700	27(29.0)	38(40.9)	28(30.1)		
701-900	11(36.7)	12(40.0)	23.3(87)		
Increase in workload				2	0.033*
No	29(27.4)	56(52.8)	21(19.8)		
Yes	118(41.7)	117(41.3)	48(17.0)		
Protective equipment				2	0.014*
Adequate	68(39.5)	62(36.0)	42(24.4)		
Insufficient	72(33.2)	62(28.6)	83(38.2)		
Presence of chronic disease				2	0.000**
No	137(41.5)	151(45.8)	42(12.7)		
Yes	10(14.7)	22(37.3)	27(45.8)		
Presence of chronic disease among parents and relatives No				2	0.000**
Yes	92(45.9)	87(44.4)	17(8.7)		

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| | 55(28.5) | 86(44.6) | 52(26.9) | | |

** p≤0.01   *p≤0.05

Table 9
Association between demographic characteristics and factors associated with depression

Independent variables	N (%) No Depression	N (%) Mild depression	N (%) Moderate depression	N (%) Severe depression	Df	X^2 (p-value)
Age group					6	0.001**
23-29 years	58(39.5)	57(38.8)	26(17.7)	6(4.1)		
30-39 years	40(23.1)	78(45.1)	34(19.7)	21(12.1)		
40-49 years	18(26.1)	42(60.9)	6(8.7)	3(4.3)		
Educational level					6	0.004**
Diploma	65(31.0)	109(51.6)	28(13.2)	9(4.2)		
Bachelors	40(26.0)	62(40.3)	33(21.4)	19(12.3)		
graduated	11(45.8)	6(25.0)	5(20.9)	2(8.3)		
Workplace					3	0.001**
Primary health care center	62(43.4)	47(32.9)	33(23.1)	1(0.7)		
Maternity hospital	60(24.4)	118(48.0)	63(25.6)	5(2)		
Duty hours					6	0.001**
Less than 8	32(45.7)	20(28.5)	11(15.7)	7(10.0)		
8 hours	57(25.1)	97(46.2)	34(16.1)	22(10.8)		
16 hours	27(24.7)	60(55.0)	21(19.2)	1(0.9)		
Income					9	0.000**
300	57(78.1)	9(12.3)	7(9.6)	0(0.0)		
301-500	56(29.0	88(45.6)	45(23.3)	4(2.1)		
501-700	8(8.6)	51(54.8)	33(35.5)	1(1.1)		
701-900	1(3.3)	17(56.7)	11(36.7)	1(3.3)		
Increase in workload					3	0.011**
No	28(26.4)	60(56.6)	16(15.1)	2(1.9)		
Yes	88(31.3)	117(41.3)	50(17.7)	28(19.9)		
Pregnancy					3	0.024*
No	112(32.0)	157(44.9)	55(15.7)	26(7.4)		
Yes	4(10.3)	20(51.3)	11(28.2)	4(10.3)		
Presence of chronic disease					3	0.001**
No	137(41.5)	151(45.8)	42(12.7)	0(0.0)		
Yes	10(16.9)	22(37.3)	26(44.1)	1(1.7)		

** p≤0.01   *p≤0.05

Pregnant midwives' participants showed statically higher depression and fear (p=0.024, p=018). Furthermore, midwives' participants who had chronic diseases reported higher levels of anxiety, burnout, depression, worry, and fear p=0.048, p≤0.001; p=0.001, p= 0.006; p< 0.01, p≤0.001), respectively. The result also showed a significant association between anxiety and burnout and the presence of chronic disease among parents and relatives (p=.006, p≤.001).

Table 10
Association between demographic characteristics and factors associated with worry

Independent variables	N (%) Low worries	N (%) Moderate worries	N (%) High worries	Df	X² (p-value)
Age group				4	0.000*
23-29 years	56(38.1)	64(43.5)	27(18.4)		
30-39 years	32(18.5)	80(46.2)	61(35.3)		
40-49 years	13(18.8)	34(49.3)	22(31.9)		
Duty hours				4	0.004**
Less than 8	30(42.9)	30(42.9)	10(14.3)		
8 hours	47(22.4)	98(45.7)	65(31)		
16 hours	24(22)	50(45.9)	35(32.1)		
Presence of chronic disease				2	0.006**
No	94(28.5)	151(45.8)	85(25.8)		
Yes	7(11.9)	27(45.8)	25(42.4)		

** p≤0.01   *p≤0.05

Table 11
Association between demographic characteristics and factors associated with fear

Independent variables	N (%) No fear	N (%) Mild to moderate fear	N (%) Severe fear	Df	X² (p-value)
Age group				4	0.000**
23-29 years	12(8.2)	108(73.5)	27(18.4)		
30-39 years	5(2.9)	94(54.3)	74(42.8)		
40-49 years	5(7.2)	37(53.6)	27(39.1)		
Duty hours				4	0.019**
Less than 8	3(4.3)	53(75.7)	14(20)		
8 hours	13(6.2)	114(54.3)	83(39.5)		
16 hours	6(5.5)	72(66.1)	31(28.4)		
Protective equipment				2	0.001**
Adequate	18(10.5)	99(57.6)	55(32)		
Insufficient	4(1.8)	140(64.5)	73(33.6)		
Pregnancy				2	0.018**
No	22(6.3)	220(62.9)	108(30.9)		
Yes	0(0.0)	19(48.7)	20(51.3)		
Presence of chronic disease				2	0.000**
No	19(5.8)	216(65.5)	95(28.8)		
Yes	3(5.1)	23(39)	33(55.9)		

** p≤0.01   *p≤0.05

Discussion

The study suggested that approximately half of the midwives' participants showed mild-to-moderate anxiety levels, less than half had severe anxiety, and almost half experienced mild depression. This result is comparable with another local study conducted among Jordanian nurses by Al-Amer et al. (2020); the reported prevalence was half of the participants who experienced moderate anxiety and moderate depression levels. A study conducted in Jordan by Alnazly et al. (2021), revealed similar findings among healthcare

providers. At the same time, Hawari et al. (2021), revealed that one-third of Jordanian health care practitioners suffered from moderate anxiety and depression. An international study from China conducted by Li et al. (2020), suggested that approximately half of the health care workers experienced anxiety symptoms and depression symptoms. Another international study conducted in China showed that half of the health care workers suffered from depression, and approximately half of the participants experienced anxiety (Liu et al., 2020). These results support the current study's findings by showing that midwives are affected by anxiety and depression during the COVID-19 pandemic (Suryasa et al., 2021).

In summary, facing a new and unknown threat, regardless of the number of cases, is a source of psychological stress among health care providers (Hawari et al., 2021). Furthermore, COVID19 is rapidly spreading, is human-to-human transmissible, specifically in health care settings, and can lead to death. Therefore, midwives' emotional and behavioral reactions must be recognized and empowered through specialized education and training to overcome psychological distress and help midwives provide care under extremely challenging clinical conditions such as the spread of the novel coronavirus (Alnazly et al., 2021; Nurhayati et al., 2022). In the current study, half of the midwives' participants indicated higher levels of burnout. This result is congruent with the Iranian study by Jalili et al. (2021), showing that higher levels of burnout are attributed to many personal and work-related factors that may contribute to employee burnout. Similar results were reported in a study conducted in China by Hu et al. (2020), among 2,014 health care workers who used the same instrument, which revealed that most participants experienced burnout.

Burnout is common among health care workers during COVID-19 (Jalili et al., 2021). Therefore, our prevalence of high burnout among midwives is comparable to recent literature reports. In addition, York & Guler (2020), found a significant relationship between depression levels and burnout. The researchers noted that while the level of depression increased, burnout increased. Likewise, in Italy, severe burnout has been found to cause anxiety and depression, which may ultimately lead to burnout syndrome and suicidal thoughts among health care providers (Chirico et al., 2021). Therefore, the current finding is concurrent with the literature, indicating an important relationship between depression and burnout and seeing together (Salvagioni et al., 2017).

The current study found that almost half of the participants experienced moderate worries, and less than half had high worries. This result is consistent with the study by Khouri & Cohen (2020), conducted in Israel to examine the relationship between the tendency to worry related to COVID-19 and anxiety, depression, and stress among health and social services (Dwijayanti et al., 2022). The study reported that most of the participants had a moderate tendency to worry, and 10% had a high tendency to worry; the result revealed that the participants who had psychological distress experienced a greater risk of worry, mediated by job burnout.

The current study showed that most midwives' participants experienced moderate fear, and almost a quarter of them had severe to extreme fear. However, the results supported by the study findings conducted by Teo et al. (2021), in Singapore among 122 health care workers revealed the majority had mild to moderate fear and more petite than a quarter had severe fear. Moreover, in a study conducted in China by Hu et al. (2020), among 2,014 frontline nurses, the result revealed that most of them had severe fear. In our study, many factors associated with midwives' psychological distress included age, duty hours, income, increased workload, protective equipment, pregnancy, chronic disease, and psychiatric disease among parents and relatives.

Consistent with previous studies, the study found a positive correlation between age and anxiety, burnout, depression, worry, and fear. In addition, the finding suggested that age between 30 and 39 years are at higher risk of psychological distress. Thus, our results indicate that midwives' age (30-39) revealed that midwives faced the risk of anxiety, burnout, depression, worry, and fear due to COVID-19. While those between the ages of 40 and 49 faced minimal risk. Moreover, younger midwives aged (23-29) and older midwives above 50 years faced a lower risk.

A study conducted by Cai et al. (2020), revealed that those aged 31-40 years were more likely to have psychological distress. This result is compatible with AlAteeq et al. (2020), who reported that the 30 -39 years age group was significantly at more risk of anxiety and depression. It could be attributed to middle age high exposure to social media, which conveys tremendous information about the pandemic. In addition, this group usually has a significant family burden which may affect their mental health status.

In this study, the result revealed that depression was significantly associated with lower levels of midwives' education. Our study findings are in line with a study conducted in Jordan by Naser et al. (2020), which found that participant with a high level of education was at high risk of anxiety and lower risk of

developing depression. Conversely, Zheng et al. (2020), found no significant effect of the level of education on depression, anxiety, and stress.

This study showed that midwives during the pandemic were more prone to anxiety and depression, especially those working in a Maternal Hospital, than midwives working in Primary Health Care Centers. This result is in line with the study done in Poland by Rotter et al. (2020), and its similar to the study done in China by Chen et al. (2020). Thus, health care workers are more prone and exposed and in direct contact with confirmed or suspected coronavirus cases and are at risk for higher infection rates and mental health problems; anxiety, fear, suffering bereavement, and trauma (Mukhtar & Mukhtar, 2020). A result can be attributed to hospitals containing a higher incidence rate of COVID-19 cases (Rohan et al., 2016).

The findings showed that burnout, depression, fear, and worry showed positive, strong associations with long work hours. Similar to a study conducted in Portugal, the researchers concluded that overtime was associated with higher levels of depression, anxiety, and stress (Sampino et al., 2020). Also, Mo et al. (2020), in China revealed that working hours during the week are the main factors affecting stress among nurses. While there was no significant relationship between psychological stress and duty hours as reported in previous studies (Chen et al., 2020; Yoruk & Guler, 2020). The current study finding is in line with the literature, which indicates that over time hurts the mental health of nurses.

The association between income and psychological stress is inconsistent with most literature. The current study findings revealed that anxiety, burnout, and depression were negatively correlated with income. At the same time, a study conducted in Jordan by Shahrour & Dardas (2020), revealed no association between income and psychological stress. Similarly, Yoruk & Guler (2020), reported no significant relationship between low income and depression. Therefore, the interpretation of our result is that perceived inadequacy income, rather than actual income level, was highly predictive of psychological distress (Sun et al., 2009).

Incongruent with the literature, the current study revealed a significant association between increased workload and anxiety, burnout, and depression. In addition, Chen et al. (2020) reported that an increased workload affected anxiety and depression. So, feeling overloaded during an outbreak can increase the incidence of both anxiety and depression.

The study's findings revealed a significant association between insufficient protective equipment and anxiety, burnout, and fear. A study by Sampaio et al. (2020), showed that adequate personal protective equipment presented a lower depression, anxiety, and stress. On the other hand, a shortage of personal protective equipment has been significantly associated with psychological distress (Senbeta et al., 2020; Yoruk & Guler, 2020; Afulani et al., 2020). Thus, our finding corroborates the literature. The reason is that the health care providers were concerned about infection from COVID-19 disease and considered themselves more likely to catch COVID-19 infections.

The current study showed that pregnant midwives have a significant association with depression and fear. We speculate that pregnant midwives suffer from uncertainty, anxiety, fear, emotional stress, and constant worries about their future (Shorey & Chan, 2020). This result could be because the pregnant woman already has fluctuations in hormonal levels and is at greater risk of developing psychological disorders (Jahan et al., 2019; Vigod et al., 2016). It was determined that there was a significant relationship between anxiety, burnout, depression, fear and worry, and the presence of chronic disease among midwives in our study. A result can be explained by the fact that people who are ill or fear infection are more likely to have adverse psychological reactions (Chen et al., 2020). In line with our findings, a study conducted in Iran by Pouralizadeh et al. (2020), found a significant association between depression and chronic disease.

Furthermore, Li et al. (2020), conducted a study in China, revealing that women health care workers with chronic disease and psychiatric diseases were at high risk of depression and anxiety. This result is also in line with studies that confirmed that health care workers who suffer from chronic disease increase their risk of anxiety and depression (Wankowicz et al., 2020; Zhu et al., 2020). Based on this finding, (Akosy & Kocak, 2020) emphasized that this already dangerous epidemic is causing more uncertainty and anxiety among healthcare workers at risk.

Finally, the current study showed a significant positive correlation between chronic disease among parents and families with anxiety and burnout. This finding was corroborated by a study conducted in Portugal by Sampaio et al. (2021), where they found that the only factors that were directly related to the outbreak of COVID-19 and were predictive factors in symptoms of depression, anxiety, and stress in nurse are fear to infect others. However, a previously conducted study indicated that nurses' primary source of anxiety during

the COVID-19 outbreak was the fear of inadvertently infecting or infecting others (Mo et al., 2020). Moreover, nurses reported increased fears of infection and even greater fear of infecting their family or friends, and this fear has led to higher levels of anxiety, depression, and stress (Sampaio et al., 2020). In addition, a study conducted in Turkey among midwifery students by Sögüt & Cangöl (2020), revealed that participants with chronic diseases in their parents or relatives were at high risk of anxiety.

4 Conclusion

In summary, the findings of this study indicated that midwives working in Maternity Hospitals and Maternal Health Care Centers in North Jordan experience mild to moderate anxiety levels, high levels of burnout, mild depression levels, moderate worries, and mild to moderate fear. In addition, many factors that contributed to anxiety, burnout, depression, worry, and fear included age, educational level, workplace, duty hours, income, an increase in workload, protective equipment, having a pregnancy, presence of chronic disease, and psychiatric disease, and presence of chronic disease among parents and relatives. Finally, the midwives are more risk-prone; understanding the factors that contribute to psychological distress from COVID-19 is crucial, and immediate action is needed to address the psychological needs of midwives. Therefore, more attention must be paid to the mental health of midwives during the COVID-19 outbreak in Jordan

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