

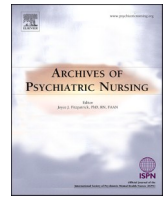


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Investigating the relationship between the depression levels of midwives and nurses and their emotional labor and secondary traumatic stress levels in the COVID-19 pandemic period with structural equation modelling[☆]

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ABSTRACT

In this study, it was aimed to investigate the relationship between depression levels in midwives and nurses and their emotional labor and secondary traumatic stress levels in the COVID-19 pandemic process structural equation modelling. This cross-sectional study was conducted with 313 midwives and nurses. According to the model formed based on the presence of depression, as the Emotional Labor scores of the participants increased, their Beck Depression scores decreased 0.947-fold, while as their Secondary Traumatic Stress Scale scores increased, their Beck Depression scores increased 1.116-fold. It was determined that the scores of the participants in the Emotional Labor and Secondary Traumatic Stress Scales explained 42.8% of their Beck Depression Inventory scores. It was concluded that the depression statuses of the participants were affected by their emotional labor and secondary traumatic stress statuses.

Introduction

With its physical and psychological health effects, the COVID-19 pandemic has negatively influenced the lives of many people. As it also has several uncertainties within itself, it may also lead to mental problems such as anxiety, stress, and depression (Cicek & Almali, 2020). Depression is seen prevalently in all age and occupation groups in society. In addition to this, various individual and life-related factors may pose a risk for depression (Heslin et al., 2016; Nietola et al., 2020; Yildirir & Tan, 2017; Zengin & Gumus, 2019). As in all individuals, depression is also an unwanted condition in healthcare workers. Nevertheless, due to various reasons, healthcare workers may sometimes experience depression (Tanriverdi & Sarihan, 2014). Especially with the COVID-19 pandemic period, in midwives, nurses, and other healthcare workers, situations like work overload, providing care for severely or terminally ill patients, intense shift schedules, disruption of sleeping patterns, and inadequacy of personal protection methods lead

to problems such as occupation-related stress and tension (Hacimusalar et al., 2020; Karasar & Canli, 2020; Yuruk Bal & Celik, 2020; Zhang et al., 2020). Witnessing a traumatic event or learning about this event is destructive in a similar way to experiencing the event first-hand (Coban & Ozbesler, 2016; Hacimusalar et al., 2020; Kalinkara & Kalayci, 2017; Zhang et al., 2020). Healthcare workers develop close relationships with individuals for whom they provide care, and they have the possibility of feeling what they experience. These characteristics of theirs may lead them to face the risk of secondary traumatic stress (Beck et al., 2015). They may feel defenseless and worn out due to the heavy emotional burden of their occupational responsibilities, and in the case that they are not able to effectively cope with secondary stress, the care they provide may be affected negatively. The stress caused by such traumas affects the workplace negatively, reduces the feeling of compassion in the care process, decreases the quality of care, and causes loss of motivation and burnout (Bayri Bingol et al., 2020). The symptoms of secondary traumatic stress are similar to those of posttraumatic stress

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disorder. Symptoms like excitability, loss of concentration, insomnia, fatigue, nightmares, feelings of re-experiencing an event, and avoidance behaviors may also be observed (Beck et al., 2015).

When the stress created by thought of transmitting the virus to their relatives and all stresses caused by the pandemic period, in addition to the anxieties they feel about their own health, are combined with the qualities of the job that require high levels of human contact and interaction, it is inevitable that these will negatively affect the emotional labor levels of healthcare workers (Bektas & Cetin, 2020). The concept of emotional labor generally involves the management and organization of emotions (Altan & Ozpehlivan, 2019). Emotion management and emotional labor, which contribute to the improvement of job outcomes and interpersonal relationships, are at the center of success (Yagci, 2020). The necessity for healthcare workers to continue performing their job without reflecting the negative feelings they experience on patients, family members, and colleagues increases their emotional labor levels significantly (Bektas & Cetin, 2020; Mazza et al., 2020). Managing these emotions and not reflecting these on patients and others requires top-level effort (Bektas & Cetin, 2020). In the COVID-19 pandemic period whose effects are going on, it may be stated that the exposure probability of midwives, nurses, and other healthcare workers to depression is very high. Depression experienced in the COVID-19 pandemic period may lead to problems such as a decrease in the labor spent emotionally for the job, reduction in satisfaction, and desensitization (Guvenc & Baltaci, 2020). Accordingly, the potential relationship between depression levels in midwives and nurses and their emotional labor and secondary traumatic stress levels raises curiosity. In light of this information, in this study, it was aimed to investigate the effects of emotional labor and secondary traumatic stress in midwives and nurses on their depression levels in the COVID-19 pandemic period using the structural equation modelling method.

Methods

Design and sample

To investigate the effects of emotional labor and secondary traumatic stress in midwives and nurses on their depression levels in the COVID-19 pandemic period using the structural equation modelling method, this study was planned with a cross-sectional design. The study was conducted in the period when curfews were in place, the number of cases was over 2 million, and healthcare workers were actively working at all stages of healthcare without leave of absence. The population of the study consisted of all midwives and nurses working at Family Health Centers (FHCs), Public Health Centers (PHCs), COVID-19 services, and other services located in a province in the Mediterranean Region of Turkey in January–February 2021 ($N = 439$). A power analysis was conducted, and with an error rate of 0.05, representative power of 80% and in a 99% confidence interval, the minimum required sample size was determined as 265. The sample of the study initially included 334 midwives and nurses who agreed to participate in the study and met the inclusion criteria. The statistical analysis was carried out with 313 questionnaire forms that were suitable for analysis.

Inclusion criteria:

All midwives and nurses

- With access to the internet,
- Working actively in the pandemic period,
- Not having a diagnosed psychiatric health problem.

Data collection instruments

In data collection, a “Personal Information Form”, the “Beck Depression Inventory (BDI)”, the “Emotional Labor Scale (ELS)”, and the “Secondary Traumatic Stress Scale (STSS)” were utilized. Validity and reliability studies of all instruments have been carried out in multiple

languages, and these instruments have been used in studies on midwives and nurses.

Personal information form

The Personal Information Form that was prepared by the researchers in line with the literature consisted of 4 questions on the sociodemographic characteristics of the participants (age, marital status, education status, and income status) and 7 questions for determining their occupation, unit of employment, and status of being diagnosed with COVID-19 in the pandemic period (Aksoy Derya et al., 2021; Hacimusalar et al., 2020; Yuruk Bal & Celik, 2020; Saatci, 2020). This form was created on Google Forms by the researchers.

Beck Depression Inventory (BDI)

The Beck Depression Inventory was developed by Beck in 1961. BDI is used to determine risk in terms of depression and measure the level and severity change of depressive symptoms (Beck et al., 1961). The validity and reliability study of the scale in Turkish was carried out by Hisli (1988). Each item of BDI determines a depression-specific behavioral pattern in the last week, and the scale includes 21 self-assessment statements with four options each from low to high (0–3). The total score of the scale is in the range of 0–63. Its cutoff point was accepted as 17 (Hisli, 1988). Those with a score of 17 or higher are considered to ‘have depressive symptoms’. When the validity and reliability of the Beck Depression Inventory were tested, it was reported that the inventory showed strong and significant correlations with the depression criteria given in DSM-III. Hence, it was concluded that the Beck Depression Inventory is a sensitive diagnostic tool to identify depressive symptoms also in general populations (Oliver & Simmons, 1984). The Cronbach's alpha value of the scale was reported as 0.80 (Hisli, 1988). In this study, the Cronbach's alpha value was found as 0.88.

Emotional Labor Scale (ELS)

The Emotional Labor Scale was developed by Diefendorff et al. (2005) and adapted into Turkish by Basim and Begeirbas (2012) (Basim & Begeirbas, 2012; Diefendorff et al., 2005). It is a 14-item, 5-point Likert-type scale (1-Absolutely Disagree, 2-Disagree, 3-Undecided, 4-Agree, 5-Absolutely Agree). The scale consists of three dimensions as Surface Behavior, Deep Behavior, and Natural Behavior. The possible scores in the scale vary from 13 to 65, and higher scores indicate a higher level of emotional labor provided by the person. The Cronbach's alpha reliability coefficient of the scale was reported as 0.80 (Basim & Begeirbas, 2012). In this study, the Cronbach's alpha value was found as 0.82.

Secondary Traumatic Stress Scale (STSS)

The Secondary Traumatic Stress Scale was developed by Bride et al. (2004) and adapted into Turkish by Yildirim et al. (2018) (Bride et al., 2004; Yildirim et al., 2018). STSS is a 5-point Likert-type assessment instrument containing 17 items. The scale has three dimensions as avoidance, intrusion, and arousal. The responses given to the statements in the scale are scored as: 1 (never), 2 (rarely), 3 (sometimes), 4 (usually) and 5 (very frequently). The score range of the scale is 17–85. Higher scores are interpreted as high levels of secondary traumatic stress. The Cronbach's alpha reliability coefficient of the scale was reported as 0.91 (Yildirim et al., 2018). In this study, the Cronbach's alpha value was found as 0.93.

Data collection

Midwives and nurses were individually reached via the mobile network system, and the participants approved the informed consent form through the Google Forms platform. Again, using Google Forms, the data collection forms were sent to the participants, and the obtained responses were digitally stored. Data collection took approximately 5–10 min for each participant.

Variables of the study

Dependent Variable: Beck Depression Inventory scores.

Independent Variables: Emotional Labor Scale scores, Secondary Traumatic Stress Scale scores, sociodemographic characteristics (age, marital status, education status, and income status), unit of employment, and status of being diagnosed with COVID-19 in the pandemic period.

Statistical analysis

The dataset that was obtained as a result of applying the questionnaire forms was firstly subjected to reliability analysis and exploratory factor analysis using the SPSS (Statistical Package for the Social Sciences) 25 software. To make sure that there was no relationship between the independent variables (factor dimensions), Variance Inflation Factor (VIF) analysis was conducted. In the case that the dependent variable was taken as discrete (depression present / depression absent), Binary Logistic Regression analysis was used. According to the total scores obtained from the Beck Depression Inventory, which was the dependent variable, the VIF values of the Secondary Traumatic Stress and Emotional Labor Scales, which were the independent variables, did not exceed 10. Accordingly, there was no multicollinearity between the independent variables (Kilinc et al., 2019). It was also determined that the Cronbach's alpha values were within the desired ranges for all scales (BDI, ELS, STSS). Finally, to reveal the causality relationships between the variables, using the AMOS 23 package program, a Structural Equation Model (SEM) named "Explanation Model of Depression by Emotional Labor and Secondary Traumatic Stress in Midwives and Nurses" was established, and the goodness-of-fit and test values of the model were interpreted. The level of statistical significance was taken as 0.05. Additionally, in the statistical analyses, percentage distribution, arithmetic mean, and standard deviation were used.

Multivariate normal distribution

The study initially included 334 participants, 21 of these participants were eliminated as they were under the $p < 0.01$ value obtained in relation to the Mahalanobis Distance result (Batmaz et al., 2020), and the analysis was carried out with the questionnaire forms filled out by 313 participants. The multivariate normal distribution of the data was checked by the "Observations farthest from the centroid (Mahalanobis Distance) Menu" in the AMOS software. The skewness value of the model was calculated as 2.426, and as this value was smaller than 8, multivariate normal distribution was provided (Inceoglu, 2018).

Ethical aspect of the study

For the study to be conducted, approval was obtained from the Turkish Ministry of Health (2020-12-06T16_50_00) and XXXXX University Health Sciences Scientific Studies and Publications Ethics Board (Decision No: 020/1367), and institutional permissions were received from the relevant institutions. Additionally, before starting the study, the participants approved the informed consent form on the Google Forms platform.

Results

The distribution of the participants based on their demographic characteristics is given in Table 1. The mean age of the participants was 30.94 ± 7.38 , 63.3% of them were married, 67.1% had undergraduate degrees, and the income and expenses of 55.3% were equivalent. It was determined that 43.5% of the participants worked at secondary health institutions (Other Services), while 73.8% were working as nurses. The rate of the midwives and nurses who had been diagnosed with COVID-19 in the pandemic period was 27.8%.

Table 1

The distribution of demographic characteristics of participants (n = 313).

Descriptive properties	$\bar{x} \pm SD$	
Age (years)	30.95 ± 7.40	
	n	%
Job		
Midwife	82	26.2
Nurse	231	73.8
Marital status		
Married	198	63.3
Single	115	36.7
Educational level		
High school	43	13.7
Associate Degree	40	12.8
Undergraduate	210	67.1
Graduate	20	6.4
Economical situation		
Income more than expenses	39	12.4
Income and expense equivalent	173	55.3
Revenue is less than expenses	101	32.3
Working unit		
The primary healthcare institutions (PHC ^a , FHC ^b)	120	38.3
The secondary healthcare institution (Covid Service)	57	18.2
The secondary healthcare institution (Other Services)	136	43.5
COVID-19 diagnosis during pandemic process		
Yes	87	27.8
No	226	72.2
Total	313	100.0

^a PHC = Public Health Center.

^b FHC = Family Health Center.

Table 2 shows the maximum and minimum scores that could be obtained from the total BDI, ELS and STSS and dimensions, as well as the maximum, minimum and mean scores of the participants in these scales. The mean total BDI score of the participants was found as 15.37 ± 9.37 . According to the categorization made based on the cutoff point of 17, it was observed that 177 (56.5%) of the participants did not have depression, while 136 (43.5%) had depression.

The mean total ELS score of the participants was 36.26 ± 9.84 , their mean Surface Behavior subscale score was 13.42 ± 5.3 , their mean Deep Behavior subscale score was 12.33 ± 4.66 , and their mean Natural Behavior subscale score was 10.51 ± 3.79 .

The mean total STSS score of the participants was 44.95 ± 14.53 , their mean Intrusion subscale score was 12.42 ± 4.38 , their mean Avoidance subscale score was 18.65 ± 5.97 , and their mean Arousal subscale score was 13.89 ± 5.13 .

Table 3 presents the prediction values of the parameters in the model that was formed based on the presence of depression in the participants. As the Emotional Labor Scale score increased, the Beck Depression Inventory score decreased 0.947-fold (OR = 0.947, 95% CI 0.915–0.981).

Table 2

The Lowest-highest scores that can be obtained from total and sub-dimensions of BDI, ELS and STSS and distribution of the lowest-highest scores and average scores of the participants.

	The lowest and highest scores that can be obtained		The lowest and the highest scores obtained		X ± SD
BDI Total	0	63	0	43	15.37 ± 9.37
ELS Total	13	65	13	59	36.26 ± 9.84
Surface behavior	6	30	6	30	13.42 ± 5.37
Deep behavior	4	20	4	20	12.33 ± 4.66
Natural behavior	3	15	3	15	10.51 ± 3.79
STSS Total	17	85	17	80	44.95 ± 14.53
Intrusion	5	25	5	23	12.42 ± 4.38
Avoidance	7	35	7	33	18.65 ± 5.97
Arousal	5	25	5	25	13.89 ± 5.13
			n		%
Depression	Yes		136		43.5
	No		177		56.5

X = Mean SD=Standard deviation.

Table 3
Prediction values of the parameters included in the model.

Variables	β	S.E.	W	sd	p value (sig)	Exp(β)	95% C.I.for EXP(B)	
							Lower limit	Upper limit
ELS	-0.054	0.018	9.085	1	0.003	0.947	0.915	0.981
STSS	0.109	0.015	55.530	1	<0.001	1.116	1.084	1.148
Age (years)	-0.002	0.025	0.005	1	0.945	0.998	0.951	1.048
Job (1)	-0.159	0.345	0.212	1	0.646	0.853	0.434	1.679
Marital status (1)	-0.347	0.359	0.935	1	0.334	0.707	0.349	1.429
Education (1)	-0.219	0.729	0.091	1	0.764	0.803	0.192	3.354
Working unit			6.411	2	0.041			
Referent: The primary healthcare institutions (PHC, FHC)								
The secondary healthcare institution (Covid service)	0.904	0.365	6.132	1	0.013	2.469	1.207	5.048
The secondary healthcare institution (Other services)	0.193	0.425	0.207	1	0.649	1.213	0.528	2.789
Economical situation Referent: Income more than expenses			28.478	2	<0.001			
Income and expense equivalent	0.164	0.477	0.118	1	0.731	1.178	0.463	2.998
Revenue is less than expenses	-1.662	0.362	21.044	1	<0.001	0.190	0.093	0.386
COVID-19 diagnosis (1)	0.466	0.328	2.020	1	0.155	1.594	0.838	3.030
Constant	-1.531	1.249	1.503	1	0.220	0.216		

β; parameter estimation, S.E; standard error; W; Wald statistics, sd; degrees of freedom, Exp (β); odds ratio, %95 CI; confidence interval; STSS; Secondary Traumatic Stress Scale, ELS; Emotional Labor Scale.

Additionally, as the Secondary Traumatic Stress Scale score increased, the Beck Depression Inventory score increased 1.116-fold (OR = 1.116, 95% CI 1.084–1.48). It was found that working at secondary-level COVID-19 services was 2.649 times more effective on the depression scores of the participants than working at primary-level COVID-19 services (OR = 2.649, 95% CI 1.207–5.048), whereas having an income level lower than one's expenses was 0.190 times more negatively effective on the depression scores of the participants than having an income level higher than expenses (OR = 0.190, 95% CI 0.093–0.386). It was observed that the other variables did not have a statistically significant effect on the depression scores of the participants ($p > 0.05$, Table 3).

Path analysis was carried out by establishing a structural equation model where the relationships between the scale scores of the participants were tested by taking the 13-item Emotional Labor Scale and the 17-item Secondary Traumatic Stress Scale as the independent variables and the 21-item Beck Depression Inventory as the dependent variable. In the newly established model, the goodness of fit index values obtained as a result of the analysis were χ^2 57.606, df 12, χ^2/df 4.8, RMSEA 0.080, GFI 0.951, IFI 0.962, and CFI 0.961. As the calculated χ^2/df value was under 5, the model was determined to be statistically significant. The IFI, CFI, and GFI values also showed the fit of the model (IFI > 0.90, CFI > 0.90, GFI > 0.90), and accordingly, the sample could be represented by the obtained data. The RMSEA value showed that the sample size was adequate (RMSEA ≤ 0.080) (Gurbuz, 2019). The path diagram of the “Explanation Model of Depression by Emotional Labor and Secondary

Traumatic Stress in Midwives and Nurses” that was established for the SEM analysis is presented in Fig. 1.

As seen in Table 4, based on the R² Coefficient of Determination which shows the extent to which the dependent variable is explained by the independent variables in the established SEM, the scores obtained from the Emotional Labor and Secondary Traumatic Stress Scales explained 42.8% of the total variation in the scores obtained from the Beck Depression Inventory.

In the established model, a 1-unit increase in the total Emotional Labor Scale score corresponded to 0.419 units (β₁) of decrease in the Beck Depression Inventory score (β₁ = -0.419; $p < 0.05$; Table 4). Moreover, a 1-standard deviation increase in the total Emotional Labor Scale score corresponded to a 0.070-standard deviation (β₂) decrease in the Beck Depression Inventory score (β₂ = -0.070; $p < 0.05$; Table 4).

In the model, a 1-unit increase in the total Secondary Traumatic

Table 4
Correlation coefficients between scales.

Scales		β ₁	β ₂	p value	R ²
BDI	ELS	-0.419	-0.070	0.037*	0.428
	STSS	1.311	0.668	<0.001*	

STSS; Secondary Traumatic Stress Scale, ELS; Emotional Labor Scale, BDI; Beck Depression Inventory, β₁; Non-standardized regression coefficients, β₂ standardized regression coefficients, R²; Explanatory Coefficient.

* $p < 0,05$; t-test result for the significance of regresson coefficients.

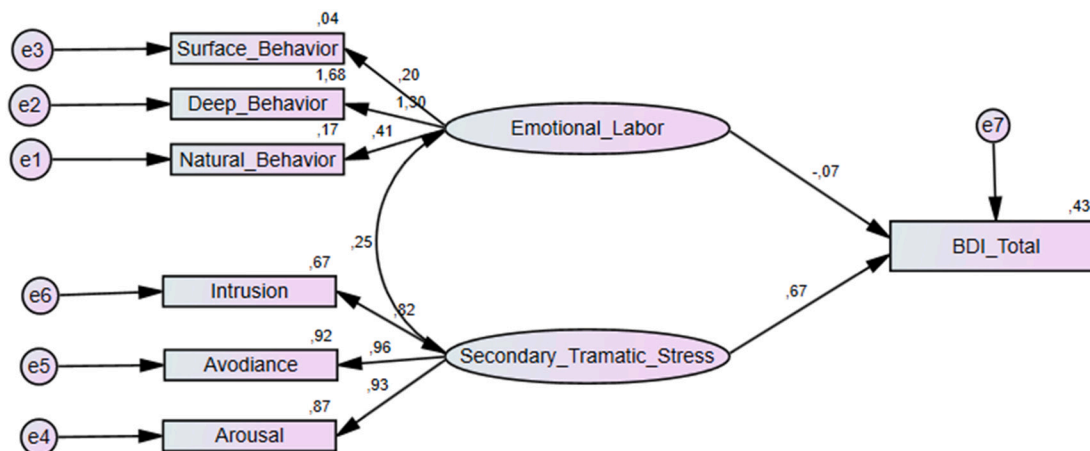


Fig. 1. Path diagram of the “Explanation Model of Depression by Emotional Labor and Secondary Traumatic Stress in Midwives and Nurses”.

Stress Scale score corresponded to 1.311 units (β_1) of increase in the Beck Depression Inventory scores ($\beta_1 = 1.311$; $p < 0.05$; Table 4). Furthermore, a 1-standard deviation increase in the total Secondary Traumatic Stress Scale score corresponded to a 0.668-standard deviation (β_2) increase in the Beck Depression Inventory score ($\beta_2 = 0.668$; $p < 0.05$; Table 4).

Discussion

In past epidemic periods and especially the COVID-19 pandemic period that we are now experiencing, the workload and responsibilities of healthcare workers have increased a lot, and healthcare workers are affected more by the virus (Liu, Yang, Zhang, Xiang, Liu et al., 2020). In the COVID-19 pandemic period, in addition to physical effects, healthcare personnel are also exposed to psychological effects (Shojaei & Masoumi, 2020). Considering other studies in the literature, it is seen that healthcare workers experience significant degrees of anxiety and depression symptoms in the COVID-19 pandemic period (Pappa et al., 2020; Spoorthy, 2020). All healthcare workers, including those working at primary healthcare institutions, have provided services to the public in the scope of contact tracing services, and they took active roles in the period when high numbers of cases were encountered. Additionally, at the time of collecting the data of this study, healthcare workers experienced problems in terms of the supply of personal protective equipment, and they fell short in protecting not only themselves but also individuals with whom they were in close contact. The problems they experienced when they lost patients to whom they provided care, with whom they were in close contact and could communicate effectively (especially their young patients), as well as their concerns about being infected and carrying the virus to their families, have affected them negatively (Gurer & Gemlik, 2020; Serrano-Ripoll et al., 2020).

In this study, the depression rate in the midwives and nurses was determined as 43.5% (Table 2). With BDI scores, which are a part of diagnostic criteria in DSM-V, the diagnosis of depression can be assessed based on symptoms such as sadness, self-blame, and feelings of failure (The American Psychiatric Association, 2021). This study also screened the participants for depression using BDI, and their mean score was considered in the assessment. According to the mean score of “15.37 \pm 9.37” identified among the midwives and nurses who participated in this study, our results indicated mild mood changes. In their study conducted in the COVID-19 pandemic period, Lin et al. (2020) reported the depression rate in healthcare workers as 46.9%, which was similar to that in our study (Lin et al., 2020). Sari et al.'s (2020) study in the COVID-19 pandemic period reported the same rate as 58.8% (Sari et al., 2020). Moreover, in this study, the rate of the participants who were found to not have depression, which was 56.5%, was noteworthy. An individual's status of experiencing depression is influenced by several variables including individual differences, psychological factors, and environmental factors. In this sense, the rates of not experiencing depression and not being exposed to trauma in the COVID-19 pandemic period in this study were compatible with those reported in the literature (El-Hage et al., 2020; Li et al., 2021; Luo et al., 2020; Muller et al., 2020; Polat & Coskun, 2020). Furthermore, it has been reported that when protocols such as providing a safe and healthy workplace, determining risks and taking precautions, supplying personal protective equipment, training and supporting employees, and raising awareness in them are followed, healthcare workers protect themselves in the right way, they are less affected by the existing conditions, and they experience lower rates of depression (Leung et al., 2003; Polat & Coskun, 2020). Considering these issues, the results in this study were in agreement with the literature.

In this study, it was determined that working at the COVID-19 services of secondary-level hospitals was 2.649 times more effective on the depression scores of the participants than working at primary healthcare institutions ($p = 0.013$; Table 3). In the literature, it is also stated that the status of being infected from the hospital environment or being in the

same environment with individuals diagnosed with COVID-19 may increase mental illness symptoms in healthcare workers (Kaya, 2020). According to Lai et al. (2020), healthcare workers in the frontlines show higher levels of depressive symptoms (Lai et al., 2020). Likewise, the findings in other studies that nurses providing care for COVID-19-positive patients have higher depression scores than those who do not provide care for such patients have supported our finding (Ayanian, 2020; Li et al., 2020; Tercan et al., 2020).

In our study, it was seen that having an income level lower than one's expenses was more negatively effective on depression scores than having an income level higher than expenses, where the midwives and nurses who perceived their income as low had higher depression rates (Table 3). In the COVID-19 pandemic period which threatens the lives of individuals, socioeconomic conditions may lead to traumatic effects such as stress and depression. It is inevitable for healthcare workers who are constantly in contact with COVID-19-positive or suspected patients in addition to increased concerns caused by the material losses brought by the pandemic to be affected more in the psychological sense (Kaya, 2020). In this respect, it is seen that the obtained finding was compatible with the literature.

The emotional labor behaviors of healthcare professionals are interpreted in the form of constant communication, being continuously accessible through 24 h, feeling one has to assure patients that they are safe, and trying to behave cheerfully all the time (Degirmenci, 2016). In this study, the mean total ELS score of the participants was 36.26 (Table 2). Considering that the maximum possible score in the scale is 65, this score was above average, and it shows that the participants spent emotional labor. Considering the subscale scores of the participants in ELS, it was determined that they had the highest mean score in the surface behavior subscale (13.42 \pm 5.3) and the lowest mean score in the natural behavior subscale (10.51 \pm 3.79) (Table 2). This finding may be interpreted as that with surface behaviors, the participants acted as if they were experiencing an emotion without actually experiencing it. This result may be explained by the possibility that midwives and nurses act cheerful even though they do not feel like it by changing their behaviors for patients to feel better in the COVID-19 pandemic. Nevertheless, based on the nature of their job, it is considered an expected situation that midwives and nurses would show natural, sincere, and close behaviors towards the patients for whom they provide care. In addition to procedures that are physically required for diagnosis and treatment, patients also need to be supported in the emotional sense (Madula et al., 2018). Accordingly, it is thought that it will be more important for healthcare workers to manage their emotional labor in this difficult period. In the health sector, midwives and nurses are constantly in communication with patients, and at this point, they have to manage the actual feelings they have. For example, healthcare workers who can keep calm and content by hiding their actual emotions while providing bad news for patient relatives constitute the most significant support. This is why emotional labor behaviors have a significant place in the professions of midwifery and nursing (Bektas & Cetin, 2020; Jeung et al., 2018). In our study, as the emotional labor scores of the participants increased, their Beck Depression Inventory scores decreased 0.947-fold (Table 3). This finding may be interpreted as that the participants used emotional labor professionally, and their depression levels may have decreased in relation to this. In the literature, it has been stated that individuals who manage their emotions well experience lower levels of job stress and depression (Karimi et al., 2014; Mikolajczak et al., 2007). While there is a limited number of studies on the topic, our finding was similar to those in the literature.

It was determined that the mean total Secondary Traumatic Stress Scale score of the midwives and nurses who participated in this study was 44.95 \pm 14.53 (Table 2). A study conducted in the COVID-19 pandemic period found a similar result to that in our study regarding mean total secondary traumatic stress levels (Ornell et al., 2020). Ornell et al. (2020) stated that the prevalence of secondary traumatic stress was high among healthcare workers who constantly face the possibility of

being infected with the virus (Ornell et al., 2020). In this study, considering the STSS subscale scores of the participants, it was found that they had the highest mean score in the avoidance subscale (18.65 ± 5.97) and the lowest mean score in the intrusion subscale (12.42 ± 4.38) (Table 2). It was observed in our study that the participants displayed avoidant attitudes. It is considered that this situation may have been caused by their fears of the risk of the COVID-19 virus infecting themselves, their families, or colleagues. Furthermore, as the Secondary Traumatic Stress Scale scores of the participants increased, their Beck Depression Inventory scores increased 1.116-fold (Table 3). Fears of death among healthcare workers and their experiences of negative events such as treating patients infected with the virus and losing loved ones in the pandemic may lead to stress and traumas (Aykut & Soner Aykut, 2020). It was argued that the COVID-19 pandemic may lead to experiences of higher levels of depression among healthcare workers exposed to traumatic events (Vagni et al., 2020). It was seen that our finding was in line with the literature, and as the secondary traumatic stress levels increased in studies conducted with healthcare workers, depression levels also increased (Baysak et al., 2019; El-Hage et al., 2020; Somville et al., 2016).

Examining to what extent the dependent variable of depression levels was explained by the independent variables (emotional labor and secondary traumatic stress) in the SEM established in this study, it was determined that the scores obtained in the Secondary Traumatic Stress and Emotional Labor Scales explained 42.8% of the total variance in the scores obtained from the Beck Depression Inventory (Fig. 1). Moreover, in the established model, a 1-unit increase in the total Emotional Labor Scale score corresponded to a 0.419-unit (β_1) reduction in the Beck Depression Inventory score, whereas a 1-unit increase in the total Secondary Traumatic Stress Scale score corresponded to a 1.311-unit (β_1) increase in the Beck Depression Inventory score (Table 4). This finding showed that among the participants of this study, emotional labor was effective in reducing depression levels, and secondary traumatic stress was effective in increasing them. In the literature, no study where depression levels were discussed together with emotional labor and secondary traumatic stress levels in the COVID-19 pandemic period could be found. During the pandemic period, when their own health was also under threat, healthcare workers have continued to perform their duties despite the risk of infection from patients to whom they provide care as a part of their profession and the unknowns about the disease. This has resulted in their exposure to secondary traumas, higher levels of emotional labor spent for their work, and burnout as losses have been experienced due to COVID-19. This may explain the results of the SEM analysis that showed a high rate of depression among the participants of this study. Considering the issue from this perspective, it is believed that the obtained finding will contribute significantly to the relevant literature.

Conclusion

In this study, where the relationship between depression levels in midwives and nurses and their emotional labor and secondary traumatic stress levels in the COVID-19 pandemic period was investigated by using the method of structural equation modelling, it was determined that approximately half of the participants experienced depression, and their depression status was affected by their emotional labor and secondary traumatic stress levels. It was also observed that unit of employment and income status were effective on depression. In these times where the fight against the COVID-19 pandemic has intensified, healthcare professionals who are frequently in contact with trauma victims as a requirement of their job may be indirectly affected by the traumatic life events they encounter. In addition to this, depression experienced in the COVID-19 pandemic period may lead to a reduction in the labor provided to the job emotionally and satisfaction, as well as problems such as desensitization. To minimize the indirect traumatic responses experienced by healthcare professionals who are at the center of the response

to the pandemic and prevent problems regarding emotional labor and desensitization, it is needed to improve working conditions, increase the level of social support, and mobilize strategies of coping with stress. Accordingly, it will be beneficial for the relevant literature to support the knowledge on the topic with new research and make comparisons to studies where DSM-V is used to assess depression levels. Moreover, protecting midwives and nurses is an important component of public health measures about the COVID-19 pandemic. The adoption of precautions that are necessary to protect the mental health of healthcare workers, who work in the frontlines and never take a break in the provision of healthcare services, should not be neglected. Thus, for healthcare workers who work selflessly with dedication, healthcare administrators should improve working conditions, increase social support levels, mobilize programs about methods of coping with stress, and plan interventions to support the motivation of these individuals. It should be kept in mind that especially healthcare workers who are women and working as midwives and nurses need more support.

What is already known?

- ✓ While the pandemic period has affected all healthcare workers and other people negatively, it has been known that midwives and nurses fight against an unknown, the infection risk of the population for which they provide care is high, and these healthcare professionals experience fears of COVID-19 infection and transmission to their families. Considering that many people have lost a loved one in this period, been exposed to true and false news, gone through the risk of losing their lives, and experienced social and emotional withdrawal, depression, trauma, and anxiety experienced with COVID-19 are expected.

Which gap does this study fill?

- ✓ No study that has examined the relationship between depression levels in midwives and nurses and their emotional labor and secondary traumatic stress levels was encountered, and while writing the article, all studies that have investigated these issues separately were added.

What did we learn?

- ✓ According to the results of the study, the depression status of the midwives and nurses was affected by their levels of emotional labor and status of experiencing secondary traumatic stress. Additionally, it was found that the unit where they worked and their income status were influential on their depression status.

Limitations

The results of this study are limited to midwives and nurses employed in a province in the Mediterranean Region of Turkey. There are no male midwives in Turkey, and men work as medical assistants. Because the vast majority of nurses and all midwives in the region were women, only women were included in the sample. This was a limitation of this study.

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Declaration of competing interest

No conflict of interest has been declared by the author(s).

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