Midwifery 116 (2023) 103555

Contents lists available at ScienceDirect

Midwifery

journal homepage: www.elsevier.com/locate/midw

Trauma-informed care for perinatal women during the COVID-19 pandemic: A survey of nurses and midwives in Turkey

Taghreed N. Salameh[a,*], Barbara Polivka[b], Becky Christian[b], İlknur Yeşilçinar[c]

[a] Koç University School of Nursing, Topkapı 34010 İstanbul, Turkey
[b] University of Kansas School of Nursing, 3901 Rainbow Blvd Kansas City, KS 66160, USA
[c] Izmir Katip Celebi University Faculty of Health Sciences, 35620 Izmir, Turkey

ARTICLE INFO

Article history:
Received 17 February 2022
Revised 2 July 2022
Accepted 11 November 2022

Keywords:
Trauma-informed care
COVID-19 concerns
COVID-19 anxiety
Perinatal women

ABSTRACT

Objectives: There is a paucity of evidence on the provision of trauma-informed care among nurses and midwives during the pandemic.Therefore, this online survey of Turkish nurses and midwives aimed to: describe reported maternal concerns and anxieties during the COVID-19 pandemic; and explore aspects of trauma-informed care for perinatal women during the COVID-19 pandemic (i.e., nurses' and midwives' knowledge, opinions, perceived competence, current practices, and implementation barriers).
Design: A cross-sectional descriptive survey design.
Setting and participants: A web-based survey conducted between June 2021 to December 2021. A total of 102 nurses and midwives comprised the final sample of this study.
Findings: The safety of COVID-19 vaccine was both the most common maternal concern (73%) and the most frequently noted maternal source of anxiety (79%) reported to nurses and midwives by perinatal women. Most nurses and midwives were knowledgeable of, held favorable opinion about, and perceived moderate competence in trauma-informed care. The most frequently provided practice was encouraging mothers to make use of their own social support system (82%). Time constrains and lack of resources were perceived as somewhat to significant barriers to providing trauma-informed care during the pandemic.
Conclusions: Access to correct information related to COVID-19 vaccination is necessary to reduce maternal anxiety. Since perinatal nurses and midwives had favorable opinions concerning implementing trauma-informed care, successful strategies for mitigating the implementation barriers are essential to facilitate the provision of trauma-informed care during the pandemic.

Introduction

The COVID-19 pandemic has led to negative effects on mental health of the general population, including high rates of symptoms of stress, depression, anxiety, and posttraumatic stress disorders (Xiong et al., 2020). Perinatal women are a particular vulnerable population because of anxiety issues related to the effect of COVID-19 infection on pregnancy outcomes and infants (Schwartz and Graham, 2020). A survey of obstetricians revealed that perinatal women had concerns about methods of protection from COVID-19, hospital visits, safety of the infant, and anxiety associated with social media information (Nanjundaswamy et al., 2020). Two systematic reviews and meta-analyses revealed higher depression and anxiety levels among pregnant and postpartum women during the pandemic compared to before the pandemic (Hessami et al., 2020; Yan et al., 2020). Researchers in Turkey also found that 35.4-56.3% of pregnant women had depressive symptoms (Durankuş and Aksu, 2020; Sut and Kucukkaya, 2020) and 64.5% had anxiety symptoms (Sut and Kucukkaya, 2020), suggesting the urgency for interventions to address the mental health needs of this vulnerable population.

There are emerging recommendations for perinatal nurses and midwives to perform mental health assessment of women, promote social support, and provide patient-centered education while focusing on pandemic related care experiences (Choi et al., 2020). In addition, there is an emphasis on the urgency of integrating trauma-informed care principles in the provision of care for the general populations during the pandemic (Collin-Vézina et al., 2020; Javakhishvili et al., 2020; Tomaz et al., 2020), and particularly for perinatal women (Choi et al., 2020). Trauma-informed care underscores the role of traumatic experiences in those with mental and/or physical health conditions (Javakhishvili et al., 2020) and

* Corresponding author at: Koc University School of Nursing, Topkapı, 34010 İstanbul, Turkey
E-mail address: tsalameh@ku.edu.tr (T.N. Salameh).

https://doi.org/10.1016/j.midw.2022.103555
0266-6138/

recommends approaches to healthcare providers and policy makers to enhance awareness of trauma estimates, understand the effect of trauma, thus preventing re-traumatization and facilitating recovery (Yatchmenoff et al., 2017). The six principles of trauma-informed care that address the consequences of trauma, facilitate the recovery process, and reflect the adherence to trauma-informed approach include: safety; trustworthiness and transparency; peer support; empowerment and choice; collaboration and mutuality; and cultural and gender issue (Substance Abuse and Mental Health Services Administration [SAMHSA], 2014a). Furthermore, SAMHSA (2014a) identified the key elements of trauma-informed care implementation in any organization, system, or program as: 1) realizing the effect of trauma; 2) recognizing the signs and symptoms related to trauma exposure in patients, families, and staff in the service system; 3) responding by using this knowledge in practice and policies; and 4) resisting re-traumatization. Notably, the key elements of trauma-informed care are sensitive to the needs of perinatal women during the pandemic (Choi et al., 2020).

Despite the impact of the pandemic on perinatal women's mental health (Iyengar et al., 2021) and the importance of trauma-informed care to promote the health and wellbeing of this vulnerable population (Kuzma et al., 2020), there is a lack of evidence on trauma-informed care practices during the pandemic among perinatal nurses and midwives. Therefore, the purposes of this survey of Turkish nurses and midwives were to: describe reported maternal concerns and anxieties during the COVID-19 pandemic; and explore aspects of trauma-informed care for perinatal women during the COVID-19 pandemic (i.e., nurses' and midwives' knowledge, opinions, perceived competence, current practices, and implementation barriers).

Methods

Design

We conducted a cross-sectional descriptive survey design study among perinatal nurses and midwives in Turkey.

Sample

A convenience sample of Turkish perinatal nurses and midwives were invited to participate in an online survey about trauma-informed care for perinatal women during the pandemic. Inclusion criteria included being employed as a nurse or midwife on a perinatal unit or service in one of the Turkish heath care settings and providing care for perinatal women during the pandemic. Per the regulations of Turkish Ministry of Health, midwives provide care for women during labor and birth, as well as antenatal and postnatal periods; women's health nurses, including perinatal nurses, are responsible for antenatal care, newborn care, and postnatal care (Republic of Turkey Presidency of Administrative Affairs General Directorate of Law and Legislation, 2020). The estimated sample size for this study was 384, calculated using the OpenEpi sample size calculator for survey studies with a confidence level of 95% and anticipated frequency of 50% (Sullivan et al., 2003). A total of 134 Turkish nurses and midwives electronically consented and returned the online survey, yielding a response rate of 35%. We excluded 32 responses with more than 50% missing data, and thus the final sample consisted of 102 nurses and midwives.

Data Collection Procedure

Data were collected online using Qualtrics XM software (Qualtrics, Seattle, WA) which is a secured web-based survey. The survey link was distributed to perinatal nurses and midwives through official websites (e.g., Turkish Midwives Association) and social media tools (e.g., WhatsApp, Facebook, and Instagram). In addition, we used a snowball sampling technique to increase survey participation by asking respondents to forward the survey link to their perinatal nurse and midwife colleagues. We sent an invitation letter explaining the purpose of the study and that participation is voluntary, participants could choose not to complete any items, and that there were no risks or benefits to completing the survey. We asked the participants to include their contact information (i.e., name and email address) at the end of the survey if they would like to be invited to take part in our future studies on trauma-informed care. The confidentiality of their information was assured through saving the de-identified survey data separately from their contact information. The survey started with an online consent form followed by survey questions. The survey was opened from 11th June to 3rd December 2020. This study was approved by the research ethics committee at a private research university in Istanbul, Turkey.

Measures

The survey for this study was structured to measure perinatal nurses and midwives reported maternal COVID-19 related concerns, anxiety and psychological distress, and aspects of trauma-informed care among perinatal nurses and midwives during the COVID-19 pandemic. Demographic and clinical data include level of education, marital status, years of clinical experience, area of clinical practice, and having a family and/or a friend infected with COVID-19, trimester of pregnancy of most frequent reported concerns and anxiety, and the use of telehealth care.

COVID-19 related Concerns and Anxiety

With permission, we included the items pertaining to COVID-19-related concerns and anxiety survey developed by Nanjundaswamy et al. (2020). In addition, we added two items addressing concerns and anxiety related to the safety of COVID-19 vaccine (American College of Obstetrics and Gynecology, 2021), as well as one item addressing the distress due to increased housework and childcare during lockdown periods. The COVID-19-related concerns scale consists of 13 items addressing the nature of concerns reported by perinatal women during the pandemic, whereas the COVID-19 related anxiety scale consists of 11 items measuring anxiety and psychological distress. Each item in both scales is rated on a 4-point-scale ranging from "not at all" to "very often."

Trauma-Informed Care

The survey of trauma-informed care for perinatal women consists of five categories measuring: knowledge (11 items); opinions (6 items); perceived competence (10 items); current practices (7 items); and implementation barriers (5 items). The items for the knowledge, opinions, perceived competence, and implementation barriers were rated on a three- or four-point Likert scale with anchors suitable for the item. For example, knowledge and opinions were rated on a four-point scale ranging from "strongly agree" to "strongly disagree. The correct responses of the knowledge scale are identified as responses options "agree/strongly agree," except for items 3 and 7, the correct responses options are "disagree/strongly disagree." Responses to current practices were measured as "yes" or "no."

We adapted the survey with permission from the trauma-informed care provider survey (Bruce et al., 2018; Kassam-Adams et al., 2015). This survey was originally designed to assess key elements and practices of trauma-informed care for pediatric patients (Kassam-Adams et al., 2015). With minor revisions in wording (i.e., asking about: the trauma in "patients" rather than "children," and the role of "family" rather than the "parents"), an

Table 1
Characteristics of participants ($N = 102$).

Characteristics	N	%
Work experience (years)		
1-5	48	47.1
6 ≥	54	52.9
Marital status		
Married	63	61.8
Unmarried	39	38.2
Number of children		
None	44	43.1
1-2	52	51.0
>2	6	5.9
Educational level		
Associate degree	10	9.8
Baccalaureate degree	57	55.9
Master's/doctoral degree	35	24.5
Practice area		
Antenatal/Obstetric & gynecologic units	13	12.7
Labor/birth units	24	23.5
Postnatal units	15	14.7
Neonatal care unit	9	8.8
Family health care center	17	16.7
Emergency/critical care/COVID-19 units	24	23.5
Current position		
Staff nurse	26	25.5
Midwife	56	54.9
Nurse/midwife educator/manager	20	19.6
When perinatal women reported their concerns		
First trimester of pregnancy	48	47.1
Second trimester of pregnancy	6	5.9
Third trimester of pregnancy	35	34.3
Postnatal period	5	4.9
Other: in every trimester and postnatal period	8	7.8
Use telehealth care or counselling		
No	88	86.3
Yes, through telephone call and/or texting	8	7.8
Yes, through online platform	6	5.9

"all patients" version of the survey was developed (Bruce et al., 2018). The Cronbach's α values of the pediatric and all patient versions, reported respectively, were fair to excellent for the knowledge (.66; .49), opinions (.60; .67), self-rated competence (.90; .90), and barriers (.69; .70) scales (Bruce et al., 2018; Kassam-Adams et al., 2015). For the adaptation of the survey in our study, we conducted minor revisions in wording as we asked about "perinatal women or mothers" rather than "children or patients," and we specified the traumatic event as "the pandemic period." In addition, we added one item to the barriers subscale to address the availability of resources about trauma-informed care in Turkey.

The content of our adapted survey was reviewed and approved by two doctoral graduate perinatal nurses with 100% agreement. We followed the guidelines by Beaton et al. (2000) to translate and back-translate the survey and ensure the cultural sensitivity of the translation. Two bilingual PhD educated nursing faculty members translated the measures from English to Turkish. One of the faculty members was aware of the concepts in the survey being translated for the purpose of the study, while the other member was not informed of the concepts being examined. After consensus on the two translated versions, the translators synthesized one translated version. Another bilingual PhD educated nursing faculty member translated the Turkish translation back to English. In addition, a two-member expert panel checked the validity of the translated survey and reached a consensus on its concepts equivalence, clarity, and readability. Furthermore, we pilot tested the survey with 10 perinatal nurses and midwives to verify the final version of the survey and assess the clarity of the online version. It is recommended to include 10-30 participants for pilots in survey study (Hill, 1998). We reached this sample through a snowball sampling technique. We did not receive any comments about the readability and clarity of the survey items. Thus, we included the participants' responses in the final survey analysis. In our study, the Cronbach's α values were adequate to excellent for the COVID-19 concerns (.87) and COVID-19 anxiety (.88) scales, and for trauma-informed care knowledge (.83), opinions (.71), self-rated competence (.91), and barriers (.71) scales.

Data analysis

Online survey data were downloaded to and analyzed using the Statistical Package for Social Sciences, version 28. Descriptive statistics using frequencies and percentages were conducted to describe the sample characteristics, as well as the responses of each survey item. Measures of central tendency and dispersion (i.e., means, standard deviation [*SD*], and ranges) were conducted to describe maternal COVID-19 concerns and anxiety, as well as perinatal nurses' and midwives' knowledge of, opinion about, perceived competence in, provision of, and barriers to trauma-informed care during the pandemic.

We checked the missing data frequencies and pattern among the sample included in the final analysis ($N = 102$). The missing values frequencies were less than 15% across all items, and the data were missing in a completely random pattern as indicated by Little's Missing Completely at Random Test ($p > .05$) (Little, 1988). Thus, we imputed missing values using the mean/median of non-missing items.

We explored potential associations between demographic variables and levels of knowledge of, opinion about, perceived competence in, and provision of trauma-informed care using Analysis of Variance and *t*-test. In addition, we used Chi-square test to examine the associations between categorical variables and the provision of trauma-informed care practices (yes vs. no). Alpha was set at .05 for all analysis conducted.

Table 2
Maternal COVID-19-related Concerns and Anxiety Reported to Turkish Nurses and Midwives ($N = 102$).

	Often/Very often n (%)	Occasionally n (%)	Not at all n (%)
Maternal COVID-19 related concerns			
1. Hospital visits for antenatal visits and scans	55 (53.9)	37 (36.3)	10 (9.8)
2. Methods for protection from COVID-19	65 (63.7)	32 (31.4)	5 (4.9)
3. Social media messages	50 (49.0)	35 (34.3)	17 (16.7)
4. Safety of the infant from infection after delivery	64 (62.7)	33 (32.4)	5 (4.9)
5. Effect of COVID-19 on the unborn baby	61 (59.8)	36 (35.3)	5 (4.9)
6. Effect of COVID-19 on pregnancy outcome	66 (64.7)	34 (33.3)	2 (2.0)
7. Safety of breastfeeding	68 (66.7)	31 (30.4)	3 (2.9)
8. Need for caesarean section to decrease chances of COVID-19 infection	44 (43.1)	37 (36.3)	21 (20.6)
9. Having to be on leave from work due to restrictions	47 (46.1)	40 (39.2)	15 (14.7)
10. Stress related to social distancing or inability to follow social distancing due to inadequate living spaces	68 (66.7)	29 (28.4)	5 (4.9)
11. Symptoms of COVID-19 infection	68 (66.7)	32 (31.4)	2 (2.0)
12. Getting tested for COVID-19	65 (63.7)	32 (31.4)	5 (4.9)
13. Safety of COVID-19 vaccine for pregnant and lactating women	74 (72.5)	23 (22.5)	5 (4.9)
Maternal COVID-19 related anxiety and psychological distress			
1. Anxiety related to excessive and worrying social media messages (both reading and receiving messages) and news	64 (62.7)	30 (29.4)	8 (7.8)
2. Excessive anxiety and worry about contracting the infection	70 (68.6)	25 (24.5)	7 (6.9)
3. Distress due to boredom and feeling isolated	43 (42.2)	47 (46.1)	12 (11.8)
4. Feeling distressed due to missing work	23 (22.5)	55 (53.9)	24 (23.5)
5. Distress due to lack of childbirth rituals (like baby showers) because of social distancing	32 (31.4)	36 (35.3)	34 (33.3)
6. Family members not following infection control procedures	60 (58.8)	30 (29.4)	12 (11.8)
7. Lack of sleep because of anxiety 8. Distress due to increased housework and childcare during lockdown periods	34 (33.3)64 (62.7)	55 (53.9)31 (30.4)	13 (12.7)7 (6.9)
9. Excessive anxiety and worry about the safety of the vaccine	81 (79.4)	15 (14.7)	6 (5.9)

Note. Items were adapted with permission from the COVID-19 related Concerns (items 1-12) and Anxiety (items 1-7) Scales in "COVID-19-related anxiety and concerns expressed by pregnant and postpartum women—a survey among obstetricians" by M.H. Nanjundaswamy, L. Shiva, G. Desai, S. Ganjekar, T. Kishore, U. Ram, ... & P. Chandra, 2020, Archives of Women's Mental Health, 23(6), p. 789 (doi:10.1080/01621459.1988.10478722).

Results

Participants' characteristics

The final sample of our study consisted of 102 participants, including 25 midwives (54.9%), 26 perinatal nurses (25.5%), and 20 nurse or midwife educators/managers (19.6%). Table 1 shows the characteristics of participants. The majority had a baccalaureate degree (55.9%) and at least six years of clinical experience (52.9%). Most participants did not have COVID-19 (56.9%) but reported that a family member (53.9%) or a friend (97.1%) was infected.

Maternal COVID-19 concerns and anxiety

The most common maternal COVID-19 related concerns (> 60%) reported to perinatal nurses and midwives were safety of COVID-19 vaccine (72.5%), symptoms of COVID-19 infection (66.7%), safety of breastfeeding (66.7%), stress related to social distancing (66.7%), effect of COVID-19 on pregnancy outcome (64.7%), methods for protection from COVID-19 (63.7%), getting tested for COVID-19 (63.7%), and safety of the infant from infection after birth (62.7%) (Table 2). The most frequent maternal anxieties reported to participants during the pandemic were about the safety of the vaccine (79.4%), contracting the infection (68.6%), worrying social media messages and news (62.7%), and increased housework and childcare during lockdown periods (62.7%) (Table 2).

Trauma-informed care

Knowledge. The mean score of the knowledge of trauma-informed care scale was 30.49 ($SD = 2.58$), with scores ranging from 17 to 39. Most participants correctly answered the knowledge scale items, except for item 2 "It is inevitable that most perinatal women and families during the global pandemic will go on to develop significant posttraumatic stress or posttraumatic stress disorder," 88.2% agreed (correct answer is disagree/strongly disagree); and item 7 "women and families with significant posttraumatic stress reactions usually show obvious signs of distress," 87.3% agreed (correct answer is disagree/strongly disagree) (Table 3).

Opinions. The opinions on the trauma-informed care scale scores ranged from 6 to 22 ($M = 17.20$, $SD = 2.19$). Most participants indicated a favorable opinion on trauma-informed care; at least 58.8% rating each item in a positive direction toward trauma-informed care (Table 4).

Perceived competence. The mean score of the perceived competence in trauma-informed care was 10.9 ($SD = 3.88$), with scores

Table 3
Participants' Knowledge of Trauma-informed Care for Perinatal Women during the COVID-19 Pandemic ($N = 102$).

Item	Disagree/Strongly disagree, *n* (%)	Agree/Strongly agree, *n* (%)
Prevalence, risk factors, and course		
1. Almost everyone who is seriously injured or ill has at least one traumatic stress reaction in the immediate aftermath of the event	11 (10.8)	91 (89.2)
2. Women who became pregnant and became mothers during the COVID-19 pandemic generally have more serious traumatic stress reactions than those who gave birth before the pandemic.	10 (9.8)	92 (90.2)
3. It is inevitable that most perinatal women and families during the global pandemic will go on to develop significant posttraumatic stress or PTSD.	12 (11.8)	90 (88.2)
4. Perinatal women who, at some point during the traumatic event (pandemic period), believe that they might die are at greater risk for posttraumatic stress reactions	13 (12.7)	89 (87.3)
5. Many women and families cope well on their own during the pandemic	66 (64.7)	36 (35.3)
6. The psychological effects of an injury or illness often last longer than the physical symptoms.	5 (4.9)	97 (95.1)
Signs and symptoms		
7. Women and families with significant posttraumatic stress reactions usually show obvious signs of distress.	13 (12.7)	89 (87.3)
8. I know the common signs and symptoms of traumatic stress in families	8 (7.8)	94 (92.2)
9. Some early traumatic stress reactions in perinatal women and their families can be part of a healthy emotional recovery process	22 (21.6)	80 (78.4)
Effectiveness of screening and intervention		
10. There are things that nurses can do to help prevent re-traumatization in mothers	5 (4.9)	97 (95.1)
11. There are effective screening measures for assessing traumatic stress that nurses can use in practice.	16 (15.7)	86 (84.3)

Note. The correct response for all items is "agree/strongly agree," except for items 3 and 7 "disagree/strongly disagree." Items were adapted with permission from the Trauma-informed Pediatric Care Survey in "Nurses' Views and Current Practice of Trauma-Informed Pediatric Nursing Care" by N. Kassam-Adams, S. Rzucidlo, M. Campbell, G. Good, E. Bonifacio, K. Slouf, . . . D. Grather, 2015, Journal of Pediatric Nursing, 30(3), p. 481 (https://doi.org/10.1016/j.pedn.2014.11.008).

Table 4
Participants' opinions related to trauma-informed care during the COVID-19 pandemic ($N = 102$).

Item	Strongly disagree, *n* (%)	Disagree, *n* (%)	Agree, *n* (%)	Strongly agree, *n* (%)
1. Providers should focus on medical care for perinatal women as opposed to women's mental health	17 (16.7)	60 (58.8)	19 (18.6)	6 (5.9)
2. The way that medical care is provided during the pandemic can be changed to make it less stressful for mothers and families	2 (2.0)	8 (7.8)	82 (80.4)	10 (9.8)
3. Providers can teach women how to cope with trauma during the pandemic	1 (1.0)	6 (5.9)	80 (78.4)	15 (14.7)
4. Health care professionals should regularly assess for symptoms of traumatic stress	2 (2.0)	5 (4.9)	78 (76.5)	17 (16.7)
5. It is necessary for providers to have mental health information about their perinatal patients in order to provide appropriate medical care.	1 (1.0)	7 (6.9)	78 (76.5)	16 (15.7)
6. I have colleagues I can turn to for help with a woman or family experiencing significant traumatic stress	1 (1.0)	22 (21.6)	69 (67.6)	10 (9.8)

Note. Items were adapted with permission from the Trauma-informed Pediatric Care Survey in "Nurses' Views and Current Practice of Trauma-Informed Pediatric Nursing Care" by N. Kassam-Adams, S. Rzucidlo, M. Campbell, G. Good, E. Bonifacio, K. Slouf, . . . D. Grather, 2015, Journal of Pediatric Nursing, 30(3), p. 481 (https://doi.org/10.1016/j.pedn.2014.11.008).

ranging from 3 to 20. The majority of participants (66%-74%) rated their compentence in the provision of trauma-informed care as "somewhat competent" (Table 5).

Current practices. Most participants indicated that they provided trauma-informed care for perinatal women during the pandemic (Table 6). The most frequently provided practice was "encouraging mothers to make use of their own social support system" (82.4%).

Implementation barriers. Approximately, 57% to 72% of participants rated the five items on barriers to trauma-informed care as "somewhat of a barrier." Less than half of participants perceived significant barriers to trauma-informed care during the pandemic with time constrains as primary barrier (33.3%), followed by lack of resources to integrate trauma-informed care to help manage anxieties among women (27.5%), confusing information/evidence on trauma-informed practices (19.6%), worrying about further upset-

Table 5
Participants' perceived competence in trauma-informed care for perinatal women ($N = 102$).

Item	Very Competent, *n* (%)	Somewhat competent, *n* (%)	Not Competent, *n* (%)
1. Engaging with traumatized mothers so that they feel comfortable talking to you	26 (25.5)	73 (71.6)	3 (2.9)
2. Responding calmly and without judgment to a mother's strong emotional distress	34 (33.3)	67 (65.7)	1 (1.0)
3. Eliciting details of a traumatic event from a mother without re-traumatizing her	21 (20.6)	70 (68.6)	11 (10.8)
4. Educating mothers about common traumatic stress reactions and symptoms	19 (18.6)	70 (68.6)	13 (12.7)
5. Avoiding or altering situations within the hospital that a mother might experience as traumatic	19 (18.6)	75 (73.5)	8 (7.8)
6. Assessing a mother's distress, emotional needs and support systems	21 (20.6)	71 (69.6)	10 (9.8)
7. Providing basic trauma-focused interventions (assessing symptoms, normalizing, providing anticipatory guidance, coping assistance)	16 (15.7)	74 (72.5)	12 (11.8)
8. Understanding how traumatic stress may present itself differently in individuals of different ages, gender, or cultures	14 (13.7)	82 (80.4)	6 (5.9)
9. Understanding the scientific or empirical basis behind assessment and intervention for traumatic stress	16 (15.7)	75 (73.5)	11 (10.8)
10. Responding to a woman's or family member's question about whether a woman will die	9 (8.8)	68 (66.7)	25 (24.5)

Note. Items were adapted with permission from the Trauma-informed Pediatric Care Survey in "Nurses' Views and Current Practice of Trauma-Informed Pediatric Nursing Care" by N. Kassam-Adams, S. Rzucidlo, M. Campbell, G. Good, E. Bonifacio, K. Slouf, . . . D. Grather, 2015, Journal of Pediatric Nursing, 30(3), p. 482 (https://doi.org/10.1016/j.pedn.2014.11.008).

Table 6
Participants' reported trauma-informed care practices implemented during the pandemic ($N = 102$).

Implemented practices	Yes, *n* (%)	No, *n* (%)
1. Ask the mother questions to assess her symptoms of distress	70 (68.6)	32 (31.4)
2. Ask the mother's care provider (spouse, family member) questions to assess their symptoms of distress	66 (64.7)	36 (35.3)
3. Teach the mother's care provider (spouse, family member) what to say to the mother after the difficult/scary experiences during the pandemic	63 (61.8)	39 (38.2)
4. Provide information to the mother's care provider (spouse, family member) about emotional or behavioral reactions that indicate that the mother may need help	73 (71.6)	29 (28.4)
5. Teach the mother or care provider (spouse, family member) specific ways to cope with upsetting experiences	69 (67.6)	33 (32.4)
6. Teach the mother or care provider (spouse, family member) ways to manage anxiety	80 (78.4)	22 (21.6)
7. Encourage mothers to make use of their own social support system (family, friends, etc.)	84 (82.4)	18 (17.6)

Note. Items were adapted with permission from the Trauma-informed Pediatric Care Survey in "Nurses' Views and Current Practice of Trauma-Informed Pediatric Nursing Care" by N. Kassam-Adams, S. Rzucidlo, M. Campbell, G. Good, E. Bonifacio, K. Slouf, . . . D. Grather, 2015, Journal of Pediatric Nursing, 30(3), p. 482 (https://doi.org/10.1016/j.pedn.2014.11.008).

ting or re-traumatizing mothers and families (10.8%), and lack of training (9.8%).

Factors related to trauma-informed care

There were no significant associations among participants' characersitics (i.e., years of work experience, marital status, educational level, and practice area), knowledege about, opinion to, and perceived competence in trauma-informed care for perinatal women during the pandemic. However, the provision of some trauma-informed care practices was significantly associated with participants' clinical area. Participants who asked the mother's care provider (spouse, family member) questions to assess their symptoms of distress were more likely to work on postnatal unit (21.8% vs. 2.8%) and family health care services (21.2% vs. 8.3%) than those who did not demonstrate this practice ($X^2 = 11.53$, $p = .042$). Finally, participants who provided information to the mother's care provider about emotional or behavioral reactions that indicate the mother may need help had higher scores in percieved competence in trauma-informed care ($M = 21.40$, $SD = 4.10$) than those who did not endorse such a practice ($M = 19.75$, $SD = 3.0$), $t(100) = 1.95$, $p = .029$.

Discussion

This online survey of Turkish nurses and midwives indicated that perinatal women reported numerous concerns and anxieties related to the COVID-19 pandemic. The safety of COVID-19 vaccines was the most common maternal concern (73%) and anxiety (79%) reported by participants. This finding may reflect the low vaccination acceptance rate (37%) in Turkish pregnant women (Goncu Ayhan et al., 2021) and the greater vaccine hesitancy in this population due to lack of information about the vaccines (Goncu Ayhan et al., 2021) and worrying about the risks of vaccines on fetus (Gencer et al., 2021; Goncu Ayhan et al., 2021). This maternal concern is critical as the number of maternal deaths during pregnancy in Turkey increased by 52% in 2020 compared to before the pandemic; 99% of maternal deaths were in unvaccinated preg-

nant women (Republic of Turkey Ministry of Health, 2022). Furthermore, a systematic review indicated that the most important reasons of hesitancy in pregnant women are mistrust and negative news in the media about the possible side effects of vaccines (Januszek et al., 2021). Congruently, our findings showed that women reported anxieties to nurses and midwives (63%) because of social media messages and news. This suggests that healthcare providers need to help women access correct and accurate information about both COVID-19 infection and its vaccines. This is crucial as a substantial number of nurses and midwives in this study indicated that perinatal women had concerns about contracting COVID-19, symptoms of COVID-19, and the effect of COVID-19 on pregnancy outcomes. Pregnant women also voiced these concerns and anxieties in qualitative studies in Turkey (Sahin and Kabakci, 2021) and globally (Atmuri et al., 2021; Karavadra et al., 2020; Rauf et al., 2021).

Our findings are consistent with prior studies indicating that women tended to report their concerns mainly during the first (Goncu Ayhan et al., 2021) and third trimesters of pregnancy (Nanjundaswamy et al., 2020), suggesting that perinatal nurses and midwives need to identify maternal concerns and screen for anxieties upon the women's knowledge of pregnancy status as well as before the birth of their newborns. This is important as the findings of this study revealed high reported rates of anxiety (23%-79%) in this population.

Whereas our findings reflect consistency among what nurses and midwives reported and what perinatal women voiced in prior studies regarding their anxieties (Atmuri et al., 2021; Karavadra et al., 2020; Rauf et al., 2021; Sahin and Kabakci, 2021), this underlines the importance of interventions to help women manage their psychological distress. Most nurses and midwives in our study demonstrated knowledge about trauma-informed care for perinatal women during the pandemic. Nevertheless, despite the high proportions of reported anxiety in this study, only few participants agreed that the development of significant posttraumatic stress can be avoided, indicating the necessity of implementing interventions to prevent trauma or retraumatization (Collin-Vézina et al., 2020; Javakhishvili et al., 2020; Tomaz et al., 2020). Furthermore, while posttraumatic stress symptoms (e.g., emotional distress, flashbacks, avoidance of trauma-related thoughts or feeling, negative affect, feeling isolated, and difficulty concentrating) are complex and may be not immediately obvious (Lewis et al., 2018; SAMHSA, 2014b), most participants of this study thought that women can show obvious signs of distress. This suggests that nurses/midwives need greater understanding about posttraumatic stress disorder symptoms.

Generally, the participants of our survey held positive opinion about the provision of trauma-informed care for perinatal women. In addition, most perceived themselves moderately competent in skills and practices pertaining to trauma-informed care. Although these are encouraging findings, there are opportunities for improvement. For instance, the least provided practice of trauma-informed care was teaching the mother's care provider (e.g., spouse, family member) what to say to the mother after the difficult/scary experiences during the pandemic. This is essential as trauma-informed care and family-centered care are complementary approaches and share various elements (e.g., sharing information with patient/family, encourage family presence, and providing patient/family with choices and sense of control) that can result in better health outcomes and decreased posttraumatic stress in patients and families (Auerbach et al., 2021). Interestingly, most nurses and midwives in our study reported that women had anxiety due to social distancing and not following infection control procedures among family members. Notably, the pandemic threatens the implementation of family-centered care due to safety precautions; however, healthcare providers need to adopt strategies such as telehealth to facilitate the implementation of family-centered care during the pandemic (Hart et al., 2020). This is important as most participants in this study encouraged perinatal women to use their support system and those who worked on postnatal unit or family health care services were more likely to implement some practice related to trauma-informed care. Nevertheless, very few participants (14%) used telehealth care or counselling to address maternal concerns.

While our study is one of the first to address practices of trauma-informed care among nurses and midwives during the pandemic, most participants perceived moderate to significant barriers to the implementation of trauma-informed care. Time constraints ranked first as a significant barrier, reflecting the challenge and workload among nurses and midwives during the pandemic. Yet, Hart et al. (2020) recommend tools and procedures to mitigate the time limitation among clinicians during the pandemic. Such tools include the use of telephone and videoconferencing as well as weekend and night coverage to continue communication with families. Some participants of this study highlighted the lack of resources in Turkey about trauma-informed care to help women manage their distress. Yet, one finding of this study revealed that participants who had a higher level of percieved competence in trauma-informed care were more likely to implement some aspects of trauma-informed care. This demonstrates an important clinical implication to enhance competence in trauma-informed care among nurses and midwives and thus improving the implementation of trauma-informed care.

Limitations

The response rate of this survey was 35% which is typical for the response rate of online surveys (Fan and Yan, 2010), especially at the difficult time during the pandemic. However, this study included a small sample of nurses and midwives to collect cross-sectional descriptive data. Thus, the generalization of our findings to all nurses and midwives in Turkey is limited. In addition, there is a potential of recall bias and social-desirability effect among the participants. Future studies should examine trauma-informed care practices in a larger sample size. In addition, because this study was the first to adapt and translate the trauma-informed care provider survey, researchers need to rigorously examine the psychometric properties of the tools and verify the properties of the response choices. Mixed-methods design studies are also recommended to provide detailed and rich understanding of nurses' and midwives' awareness about trauma and the implementation of trauma-informed care for perinatal women during and beyond the pandemic.

Conclusions

This study is one of the first to explore trauma-informed care practices among nurses and midwives during the pandemic. The findings indicated that perinatal women have numerous concerns and anxieties that need to be addressed to prevent adverse health outcomes on the mothers and their infants. The safety of COVD-19 vaccines is the major maternal concern and source of anxiety which necessitates an urgent action to help women have access to correct information. Finally, there is an urgent need to integrate the trauma-informed care framework to respond to maternal mental health needs during the pandemic. Thus, continuing professional education for nurses and midwives about trauma-informed care as well as encouraging the adoption of appropriate strategies and tools such as telehealth care are necessary to improve the implementation of trauma-informed care during the pandemic and beyond.

Author contributions

All authors have approved the final manuscript, made substantial contributions to the conception, design, and/or interpretation of the data, and to intellectual content of the article.

Taghreed N. Salameh: Conceptualization, Methodology, Software, Formal analysis, Writing - original draft.

Barbara Polivka: Conceptualization, Methodology, Interpretation of the data, Writing - review and editing

Becky Christian: Conceptualization, Methodology, Interpretation of the data, Writing - review and editing

İlknur Yeşilçinar: Methodology, Interpretation of the data, Writing - review and editing

Ethical approval

The study was approved by the Institutional Review Board of Koç University (Ethical approval number 2021.244.IRB3.116).

Funding

None.

Declaration of Competing Interest

The authors have no competing interests to report

Acknowledgment

We thank all participants for taking part in this study despite the challenging time of the pandemic.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.midw.2022.103555.

References

American College of Obstetrics and Gynecology, 2021. Vaccinating pregnant and lactating patients against COVID-19. Accessible online at https://www.acog.org/clinical/clinical-guidance/practice-advisory/articles/2020/12/vaccinating-pregnant-and-lactating-patients-against-covid-19

Atmuri, K., Sarkar, M., Obudu, E., Kumar, A., 2021. Perspectives of pregnant women during the COVID-19 pandemic: a qualitative study. Women Birth doi:10.1016/j.wombi.2021.03.008.

Auerbach, M., Butler, L., Myers, S.R., Donoghue, A., Kassam-Adams, N., 2021. Implementing family presence during pediatric resuscitations in the emergency department: family-centered care and trauma-informed care best practices. J. Emerg. Nurs. 47 (5), 689–692. doi:10.1016/j.jen.2021.07.003.

Beaton, D.E., Bombardier, C., Guillemin, F., Ferraz, M.B., 2000. Guidelines for the process of cross-cultural adaptation of self-report measures. Spine 25 (24), 3186–3191.

Bruce, M.M., Kassam-Adams, N., Rogers, M., Anderson, K.M., Sluys, K.P., … Richmond, T.S., 2018. Trauma providers' knowledge, views and practice of trauma-informed care. J. Trauma Nurs. 25 (2), 131.

Choi, K.R., Records, K., Low, L.K., Alhusen, J.L., Kenner, C., Bloch, J.R., … Logsdon, M.C., 2020. Promotion of maternal–infant mental health and trauma-informed care during the COVID-19 pandemic. JOGNN 49 (5), 409–415. doi:10.1016/j.jogn.2020.07.004.

Collin-Vézina, D., Brend, D., Beeman, I., 2020. When it counts the most: trauma-informed care and the COVID-19 global pandemic. Development Child Welf 2 (3), 172–179. doi:10.1177/2516103220942530.

Durankuş, F., Aksu, E., 2020. Effects of the COVID-19 pandemic on anxiety and depressive symptoms in pregnant women: a preliminary study. J. Matern. Fetal Neonatal Med. 1–7. doi:10.1080/14767058.2020.1763946.

Fan, W., Yan, Z., 2010. Factors affecting response rates of the web survey: a systematic review. Comput. Hum. Behav. 26 (2), 132–139. doi:10.1016/j.chb.2009.10.015.

Gencer, H., Özkan, S., Vardar, O., Serçekuş, P., 2021. The effects of the COVID 19 pandemic on vaccine decisions in pregnant women. Women Birth doi:10.1016/j.wombi.2021.05.003.

Goncu Ayhan, S., Oluklu, D., Atalay, A., Menekse Beser, D., Tanacan, A., Moraloglu Tekin, O., Sahin, D., 2021. COVID-19 vaccine acceptance in pregnant women. Int. J. Gynaecol. Obstet. doi:10.1002/ijgo.13713.

Hart, J.L., Turnbull, A.E., Oppenheim, I.M., Courtright, K.R., 2020. Family-centered care during the COVID-19 era. J. Pain Symptom Manage. 60 (2), e93–e97. doi:10.1016/j.jpainsymman.2020.04.017.

Hessami, K., Romanelli, C., Chiurazzi, M., Cozzolino, M., 2020. COVID-19 pandemic and maternal mental health: a systematic review and meta-analysis. J. Matern. Fetal Neonatal Med. 1–8. doi:10.1080/14767058.2020.1843155.

Hill, R., 1998. What sample size is "enough" in internet survey research. IPCT-J 6 (3-4), 1–12.

Iyengar, U., Jaiprakash, B., Haitsuka, H., Kim, S., 2021. One year into the pandemic: a systematic review of perinatal mental health outcomes during COVID-19. Front. Psychiatry 12, 845. doi:10.3389/fpsyt.2021.674194.

Januszek, S.M., Faryniak-Zuzak, A., Barnaś, E., Łoziński, T., Góra, T., Siwiec, N., … Kluz, T., 2021. The approach of pregnant women to vaccination based on a COVID-19 systematic review. Medicina 57 (9), 977. doi:10.3390/medicina57090977.

Javakhishvili, J.D., Ardino, V., Bragesjö, M., Kazlauskas, E., Olff, M., Schäfer, I., 2020. Trauma-informed responses in addressing public mental health consequences of the COVID-19 pandemic: position paper of the European Society for Traumatic Stress Studies (ESTSS). Eur. J. Psychotraumatol. 11 (1), 1780782. doi:10.1080/20008198.2020.1780782.

Karavadra, B., Stockl, A., Prosser-Snelling, E., Simpson, P., Morris, E., 2020. Women's perceptions of COVID-19 and their healthcare experiences: a qualitative thematic analysis of a national survey of pregnant women in the United Kingdom. BMC Pregnancy Childbirth (1) 1–8. doi:10.1186/s12884-020-03283-2.

Kassam-Adams, N., Rzucidlo, S., Campbell, M., Good, G., Bonifacio, E., Slouf, K., … Grather, D., 2015. Nurses' views and current practice of trauma-informed pediatric nursing care. J. Pediatr. Nurs. 30 (3), 478–484. doi:10.1016/j.pedn.2014.11.008.

Kuzma, E.K., Pardee, M., Morgan, A., 2020. Implementing patient-centered trauma-informed care for the perinatal nurse. J. Perinat. Neonatal. Nurs. 34 (4), E23–E31. doi:10.1097/JPN.0000000000000520.

Lewis, C., Raisanen, L., Bisson, J.I., Jones, I., Zammit, S., 2018. Trauma exposure and undetected posttraumatic stress disorder among adults with a mental disorder. Depress. Anxiety 35 (2), 178–184. doi:10.1002/da.22707.

Little, R.J., 1988. A test of missing completely at random for multivariate data with missing values. J. Am. Stat. Assoc. 83 (404), 1198–1202. doi:10.1080/01621459.1988.10478722.

Nanjundaswamy, M.H., Shiva, L., Desai, G., Ganjekar, S., Kishore, T., Ram, U., … Chandra, P.S., 2020. COVID-19-related anxiety and concerns expressed by pregnant and postpartum women—a survey among obstetricians. Arch. Womens Ment. Health 23 (6), 787–790. doi:10.1007/s00737-020-01060-w.

Rauf, N., Zulfiqar, S., Mumtaz, S., Maryam, H., Shoukat, R., Malik, A., … Atif, N., 2021. The Impact of the COVID-19 pandemic on pregnant women with perinatal anxiety symptoms in Pakistan: a qualitative study. Int. J. Environ. Res. 18 (16), 8237. doi:10.3390/ijerph18168237.

Republic of Turkey Ministry of Health., 2022. COVID-19 vaccination information platform. Accessible online at https://covid19asi.saglik.gov.tr/?_Dil=2

Republic of Turkey Presidency of Administrative Affairs General Directorate of Law and Legislation., 2020. Nursing Regulations. Accessible online at: https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=13830&MevzuatTur=7&MevzuatTertip=5

Sahin, B.M., Kabakci, E.N., 2021. The experiences of pregnant women during the COVID-19 pandemic in Turkey: a qualitative study. Women Birth 34 (2), 162–169. doi:10.1016/j.wombi.2020.09.022.

Schwartz, D.A., Graham, A.L., 2020. Potential maternal and infant outcomes from coronavirus 2019-nCoV (SARS-CoV-2) infecting pregnant women: lessons from SARS, MERS, and other human coronavirus infections. Viruses 12 (2), 194. doi:10.3390/v12020194.

Substance Abuse and Mental Health Services Administration., 2014. SAMSHA's concept of trauma and guidance for trauma-informed approach. SAMSHA's Trauma and Justice Strategic Initiative. Accessible online at: https://ncsacw.samhsa.gov/userfiles/files/SAMHSA_Trauma.pdf

Substance Abuse and Mental Health Services Administration., 2014. Trauma-informed care in behavioral health services. Treatment Improvement Protocol (TIP) Series 57. Accessible online at: https://store.samhsa.gov/product/TIP-57-Trauma-Informed-Care-in-Behavioral-Health-Services/SMA14-4816

Sullivan, K., Dean, A., Mir, R., 2003. Open source statistics for public health. Accessible online at http://openepi.com/SampleSize/SSPropor.htm

Sut, H.K., Kucukkaya, B., 2020. Anxiety, depression, and related factors in pregnant women during the COVID-19 pandemic in Turkey: a web-based cross-sectional study. Perspect. Psychiatr. Care 10.1111%2Fppc.12627.

Tomaz, T., Castro-Vale, I., 2020. Trauma-informed care in primary health settings—which is even more needed in times of COVID-19. Healthcare 8 (3), 340. doi:10.3390/healthcare8030340.

Xiong, J., Lipsitz, O., Nasri, F., Lui, L.M., Gill, H., Phan, L., … McIntyre, R.S., 2020. Impact of COVID-19 pandemic on mental health in the general population: a systematic review. J. Affect. Disord. 277, 55–64. doi:10.1016/j.jad.2020.08.001.

Yan, H., Ding, Y., Guo, W., 2020. Mental health of pregnant and postpartum women during the coronavirus disease 2019 pandemic: a systematic review and meta-analysis. Front. Psychol. 11, 617001. doi:10.3389/fpsyg.2020.617001.

Yatchmenoff, D.K., Sundborg, S.A., Davis, M.A., 2017. Implementing trauma-informed care: recommendations on the process. Adv. Soc. Work 18 (1), 167–185. doi:10.18060/21311.