journal homepage: http://kont.zsf.jcu.cz
DOI: 10.32725/kont.2022.026

KONTAKT / Journal of nursing and social sciences related to health and illness

Original research article

Women's childbirth expectations and perceived effects of COVID-19 protocols on delivery

Victoria U. Enwereji-Emeka [1], Chikaodili N. Ihudiebube-Splendor [1, 2] *, Faith C. Diorgu [1], Paulina C. Chikeme [2], Chidinma E. Israel [2]

[1] *University of Port Harcourt, African Centre of Excellence for Public Health and Toxicological Research, Department of Midwifery/Child Health Nursing, Port Harcourt, Rivers State, Nigeria*
[2] *University of Nigeria Nsukka, Enugu Campus, Department of Nursing Sciences, Nsukka, Enugu State, Nigeria*

Abstract
Aim: The study assessed women's childbirth expectations and perceived effects of COVID-19 protocols on delivery in selected healthcare facilities in Umuahia, Abia State, Nigeria.
Methods: The study adopted a cross-sectional descriptive survey research design. 304 women were purposively recruited from March through December 2020 from selected healthcare facilities in Umuahia. A validated researcher-developed questionnaire was used as instrument for data collection. Data obtained were subjected to descriptive statistics of frequencies, means, and standard deviations.
Results: Major findings showed highly rated expectations of women during childbirth were women's involvement in decision making about their care (3.69 ± 3.20), provision of adequate information on baby care (3.65 ± 3.17), and positive attitude of healthcare providers (3.59 ± 3.11). A greater number of the participants strongly agreed that COVID-19 lockdown led to severe labor outcomes (3.25 ± 2.98) and delays in observing COVID-19 protocols by skilled personnel during delivery pose a great threat to mother and baby (3.58 ± 3.12). On the other hand, observation of social distancing by midwives (1.57 ± 1.28) and testing women for COVID-19 before admission (1.96 ± 1.58) did not have any negative effect on the women's delivery.
Conclusions: Women's involvement in decision making concerning their birth plans and care are among the women's expectations for their birth. Healthcare providers need to fully understand these expectations and provide care that is consistent with them. It is also essential that information provided to antenatal women, especially during pandemics, is comprehensive and comprehensible. This should be used to openly communicate issues that may impact their birth experience, particularly in pandemics.

Keywords: Childbirth expectations; COVID-19 protocols; Delivery; Perceived effect; Women

Introduction

Childbirth is one of the most notable events in a woman's life (Bell and Andersson, 2016). Birth, also known as labor or delivery, is the closing of pregnancy where one or more babies pass through the birth canal or by abdominal surgery known as caesarean section (Martin, 2015). Globally, about 140 million women give birth every year without risk factors for complications for themselves or their babies throughout labor (WHO, 2018). 287,000 women die of causes associated with childbirth, 99% of these are in developing countries (WHO, 2019). In Nigeria, the birth rate in 2020 was 37.3 births per 1,000 people, and Nigeria ranked 20th on the list of the countries with the highest birth rate in the African Continent (Kamer, 2022).

Labor and childbirth are a particularly vulnerable time for women, though every woman experiences it differently, the need for attention and care is particularly important (Changole et al., 2010). Previous birth experiences, both positive and negative, can affect women's expectations of their subsequent childbirth experiences. Concepts related to these positive expectations for birth comprise closeness of the partner, sense of protection, security, and serenity. The scenario imagined by women is one that minimizes the sense of empowerment and threatens their well-being and health in the short and long term. However, during the COVID-19 pandemic these concepts changed to feelings of danger, anxiety, and loneliness. In the group of human rights in pregnancy and childbirth, WHO acknowledges the importance of birth companionship, freedom of birthing positions, bonding between mother and child after birth as much as possible, and the promotion of breastfeeding. Regrettably, across the globe, the pandemic has disrupted care of women and children in several ways, such as, separation of COVID-19 suspected and confirmed women from their babies and preventing breastfeeding, which is contrary to both WHO

* **Corresponding author:** Chikaodili N. Ihudiebube-Splendor, University of Nigeria Nsukka, Enugu Campus, Nsukka, 400001 Enugu State, Nigeria; e-mail: chikaodili.ihudiebube-splendor@unn.edu.ng
http://doi.org/10.32725/kont.2022.026
Submitted: 2022-06-17 • Accepted: 2022-09-12 • Prepublished online: 2022-09-21
KONTAKT 24/3: 199–204 • EISSN 1804-7122 • ISSN 1212-4117

standards and most COVID-19 guidelines. In Nigeria for instance, the healthcare system was inadequate and unprepared to contain the COVID-19 pandemic. Abia State in particular, recorded the highest daily figure, with sixty-seven infections out of 260 new cases of COVID-19 – as announced by the Nigeria Center for Disease Control (NCDC) on 7th June 2020. This figure was more than four times as high as the initial sixteen infections ever since February 2020. Expectant mothers, healthcare providers and families have been stuck with fear. The state also faced the challenge of an acute shortage of midwives and obstetricians, substandard equipment and other safety materials to work with, poor remuneration of the few health workers, poor medical care, weak monitoring and supervision, as well as other aspects that could affect the expectations of women.

Meanwhile, a recently published study revealed that COVID-19 does not seem to affect pregnant women more than the general population (Chen et al., 2020); it is even more important that reproductive human rights were respected and upheld. It is also important for women to have trusted companions – including health care staff and relatives – around them during labor and childbirth (WHO, 2022), since prohibitory changes and restrictions, such as banning of birth companions or breastfeeding, can weaken trust and negatively influence women's birth expectations. In their study, White Ribbon Alliance (2019) stated that the pandemic is certainly altering women's perspectives, resulting in reduced feelings of trust, closeness and serenity, and an increase in feelings of danger, anxiety, and abandonment. If these negative constructs pervade then there may be unintended consequences, including an impact on birth expectations and further distress for the woman and the child (White Ribbon Alliance, 2019). Discovering how women feel and their specific needs at this time ensure that healthcare providers can strive to create a respectful alliance and empower women with self-confidence. It is important for women to have trusted support around them during labor and childbirth, including healthcare workers and birth companions (WHO, 2018). Hence, in line with the above, the study assessed the women's childbirth expectations and their perceived effects of COVID-19 protocols on delivery during the peak period of the pandemic in selected healthcare facilities in Umuahia, Abia State, Nigeria.

Materials and methods

The study adopted a cross-sectional descriptive survey research design. A sample size of 304 was calculated from a total population of 1,268 using Taro Yamene's formular: $n = N/^1 + N(e)^2$. Where n = Sample size; N = Population size; e = Level of precision or Sampling error, which is ± 5%. Women that met the following inclusion criteria: delivered their babies in the selected healthcare facilities during the peak periods of COVID-19 pandemic (between March and December 2020); aged between 20 and 45 years; willingness to participate in the study; and had no coexisting medical condition were purposively recruited from Federal Medical Centre (FMC) Umuahia and Abia State Specialist Diagnostic Centre Umuahia, which were designated COVID centres. A validated researcher-developed questionnaire was used as an instrument for data collection. The instrument was pilot tested using a group of women with similar features in General Hospital Aba; a test-retest method was applied, and data obtained were analyzed using Cronbach Alpha test which yielded a reliability coefficient of 0.75. Ethical approval for the study was obtained from the Ethics and Research Committees of Federal Medical Centre Umuahia (FMC/QEH/G.596/Vol.10/503). Administrative permits were obtained from the Unit heads, while written informed consents were obtained from the participants. With the assistance of five student midwives, the questionnaires were administered to participants during their visits to the Infant Welfare Clinic. The data collection lasted for eight months. Data obtained were subjected to descriptive statistics of frequencies, means and standard deviations, and the results were presented in tables. All analyses were completed with the aid of the International Business Machine Statistical Package for Social Sciences (version 23.0).

Results

304 questionnaires were distributed and 280 were properly filled and returned, giving a 92% retrieval rate.

The results in Table 1 show that the majority of the participants – 200 (71.4%), were from FMC Umuahia; had a mean and standard deviation age of 25.9 ± 3.2 years; attained tertiary level of education – 195 (69.6%); were married – 260 (92.9%); engaged in a thriving business – 200 (71.4%); were predominantly Christian – 270 (96.4%); had given birth at least once – 150 (53.6%) and had normal vaginal delivery – 180 (64.3%).

Table 1. Socio-demographic characteristics of participants (n = 280)

Variables	Frequency (percentage)
Healthcare facility	
Federal Medical Centre	200 (71.4)
Abia State Specialist Diagnostic Centre	80 (28.6)
Age (years)	
<25	104 (37.2)
25–30	150 (53.6)
31–35	20 (7.1)
>35	6 (2.1)
Mean ± SD = 25.9 ± 3.2	
Highest educational level	
Primary	0 (0.0)
Secondary	85 (30.4)
Tertiary	195 (69.6)
Marital status	
Single	20 (7.1)
Married	260 (92.9)
Divorced/Widowed	0 (0.0)
Occupation	
Student	4 (1.4)
Housewife	8 (2.9)
Civil servant	68 (24.3)
Business	200 (71.4)
Religion	
Christianity	270 (96.4)
Islam	0 (0.0)
None	10 (3.6)
Parity	
Has given birth once	150 (53.6)
Has given birth 2–4 times	120 (42.9)
Has given birth >5 times	10 (3.5)
Type of delivery	
Normal vaginal delivery	180 (64.3)
Assisted (instrumental) delivery	20 (7.1)
Caesarean delivery	80 (28.6)

Table 2 showed the participants' expectations during childbirth. The constituent variables showed that involving women in decisions about their care was the highest-rated expectation (3.69 ± 3.20), followed by provision of adequate information on baby care (3.65 ± 3.17). All the variables mentioned had a mean value greater than 2.5, which was the minimum cut off value. The mean average was 3.47 ± 2.99.

Table 2. Participants' expectations during childbirth (*n* = 280)

Participants' expectations	Strongly agreed F (%)	Agreed F (%)	Strongly disagreed F (%)	Disagreed F (%)	Mean ± SD
Giving appropriate and timely information on birth process	150 (53.57)	120 (42.86)	4 (1.43)	6 (2.14)	3.48 ± 3.00
Involving women in decisions about their care	200 (71.43)	76 (27.14)	2 (0.71)	2 (0.71)	3.69 ± 3.20
Have a natural birth	140 (50.00)	80 (28.57)	40 (14.29)	20 (7.14)	3.21 ± 2.83
Treating women with respect and dignity	101 (36.07)	175 (62.50)	1 (0.36)	3 (1.07)	3.34 ± 2.84
Having skilled healthcare workers to attend to me always	162 (57.86)	88 (31.43)	20 (7.14)	10 (3.57)	3.44 ± 2.99
Positive attitude of healthcare providers	180 (64.28)	89 (31.79)	6 (2.14)	5 (1.79)	3.59 ± 3.11
Having adequate equipment and supplies	78 (27.86)	200 (71.43)	1 (0.36)	1 (0.36)	3.27 ± 2.76
Provision of information on danger signs after delivery	168 (60.00)	108 (38.57)	3 (1.07)	1 (0.36)	3.58 ± 3.09
Provision of adequate information on baby care	200 (71.43)	68 (24.29)	7 (2.50)	5 (1.79)	3.65 ± 3.17
Mean of means ± SD = 3.47 ± 2.99					

The results in Table 3 showed the participants' perceived effects of COVID-19 protocols on delivery. A greater number strongly agreed that the COVID-19 lockdown led to severe labor outcomes (3.25 ± 2.98) and unnecessary delays by skilled personnel in attending to women in labor, and that the pandemic posed a great threat to mother and baby (3.58 ± 3.12). On the other hand, the majority disagreed that social distancing disrupts quality care of midwives (1.57 ± 1.28) and strongly disagreed that testing women for COVID-19 before admission can increase their level of anxiety (1.96 ± 1.58).

Table 3. Perceived effects of COVID-19 protocols on delivery (*n* = 280)

Perceived effects	Strongly agreed F (%)	Agreed F (%)	Strongly disagreed F (%)	Disagreed F (%)	Mean ± SD
COVID-19 lockdown led to severe labor outcomes	200 (71.43)	10 (3.57)	10 (3.57)	60 (21.43)	3.25 ± 2.98
Social distancing disrupts quality care by midwives	10 (3.57)	40 (14.29)	50 (17.86)	180 (64.28)	1.57 ± 1.28
Delays in observing COVID-19 protocols by skilled personnel during delivery pose a great threat to mother and baby	180 (64.28)	90 (32.14)	2 (0.71)	8 (2.86)	3.58 ± 3.12
Anxiety and fear associated with COVID-19 lead to premature labor	50 (17.86)	170 (60.71)	40 (14.29)	20 (7.14)	2.89 ± 2.46
Restricting birth companions and support persons during labor lead to increased fear and neglect	100 (35.71)	80 (28.57)	90 (32.14)	10 (3.57)	2.96 ± 2.58
Testing women for COVID-19 before admission can increase their level of anxiety	20 (7.14)	20 (7.14)	170 (60.71)	70 (25.00)	1.96 ± 1.58
Appropriate precautions taken by skilled attendants during birth can prevent the spread of coronavirus	100 (35.71)	50 (17.86)	80 (28.57)	50 (17.86)	2.71 ± 2.43
Having women provided with adequate information on COVID-19 protocols antenatally will bridge the gap in their knowledge about the condition	168 (60.00)	108 (38.57)	3 (1.07)	1 (0.36)	3.58 ± 3.12
Provision of adequate information on baby care	200 (71.43)	68 (24.29)	7 (2.50)	5 (1.79)	3.65 ± 3.17
Mean of means ± SD = 2.70 ± 2.34					

Discussion

Women's expectations during childbirth

Labor and childbirth are particularly vulnerable periods for women and their families. The highly transmissible nature of COVID-19 was a challenge for all affected countries, including Nigeria – particularly where infection rates were rising rapidly. Expectant women were feeling very anxious and vulnerable because of the pandemic. Their anxiety was increased by safety concerns around catching COVID-19 while pregnant, the risk to their unborn child, potential challenges accessing healthcare facilities and eventual safe delivery. Giving birth in Nigeria was further complicated by the COVID-19 pandemic. The majority of the study participants indicated that, among others, the involvement of women in decision making about their care (3.69 ± 3.20), provision of adequate information on caring for their babies (3.65 ± 3.17), and positive attitudes of healthcare providers (3.59 ± 3.11) were their main expectations during childbirth. This emphasized the importance of adequate and effective communication between the healthcare providers and the women. Some women in the study provided examples in which the midwives communicated effectively with them. They highlighted the importance of midwives showing interest in their wellbeing and that of the baby; and providing clear explanations to procedures. This finding is similar to studies by Afaya et al. (2017) and Srivastava et al. (2015) in which women reported their satisfaction with the information they received from midwives. Dzomeku et al. (2018) also posited that effective and adequate communcation and relational skills of healthcare personnels are major determinants of trust between care providers and women. In addition, most (>90%) of the mothers in the study were between 20–35 years old. It is likely that these younger participants belong to the group of childbearing age who are more energetic and, as such, more eager to receive information that will better their lives and that of the newborn. All (100%) participants had formal education, majorly tertiary education. Women with some formal educations are more likely to be better informed about healthcare and adopt improved healthy practices. This showed that women are moving with the trends in the educational system in Nigeria. Therefore midwives need to be more proactive in the provision of information and explanations to procedures to ensure effective and cooperative maternity care – as some participants, particularly those who underwent emergency caesarean section, were distraught due to the inadequate provision of information about the surgical procedure. Contrary to this finding, other studies have highlighted the negative impact that staff attitudes and communication have on women (Bhavnami and Newburn, 2010; Rudman and Waldenstrom, 2007). For the most part, the women in these studies described the attitude of the healthcare staff positively, although a small minority reported that some had spoken to them in a manner thought to be inappropriate. However, Brown et al. (2005) reported that the greatest effects on women's overall rating of positive attitude of the healthcare providers were based on their interaction with healthcare providers, including how sensitive and understanding they were, how busy they seemed to be, and if advice and support were offered.

Perceived effects of COVID-19 protocols on delivery

Patients' understanding of the effects of COVID-19 on child delivery indicated that the COVID-19 awareness campaign had been fruitful. The majority of the participants agreed that COVID-19 posed a threat to the mother and her baby. The participants believed that COVID-19 is real and a threat to mother and child. This is similar to the findings of Rasmussen and Jamieson (2020). The clinical symptoms of COVID-19 in pregnancy are similar to those in non-pregnant individuals (Huntley et al.,i2020). The main clinical symptoms are fever, myalgia, dry cough, shortness of breath, and fatigue. Some of these symptoms overlap with those of normal pregnancy, and so high clinical suspicion is necessary even in afebrile women. Based on limited study, no compelling evidence suggests intrauterine vertical transmission of COVID-19 from infected women to their babies (Karimi-Zarchi et al., 2020). However, postnatal contamination cannot be conclusively ruled out. In early studies from China, it was noted that some newborns were preterm and low birth weight when born to COVID-19 positive mothers, but evidence as to whether these were related to the disease is unclear. This could mean that a greater part of the client's antenatal care, such as direct contact with an obstetrician or midwife, adequate physical and ultrasound examination, and the regularity of the follow-up schedule was noticeably disrupted. This raises further concerns regarding potential adverse outcomes that result from missed opportunities for prevention of early intervention, thereby causing severe labour outcomes. Similar to this finding, Riley et al. (2020), reported a reduction of only 10% in the provision of pregnancy-related and newborn services in low-and middle-income countries during the COVID-19 outbreak. This could lead to castastrophic increases in the number of maternal and neonatal deaths, as well as women experiencing major obstetric complications, and newborns experiencing major complications without receiving appropriate care.

Moreso agrees with the study by Ramoni et al. (2020), which states that maternal and child health services have been intensely influenced by the COVID-19 pandemic. With its emergence in Nigeria, a considerable number of pregnant women have not experienced fair treatment at health facilities for antenatal care and delivery (3.25 ± 2.98). This supports UNICEF Data (2020) postulations that expectant mothers and mothers with newborns may experience difficulties accessing services because of transport interruptions and lockdown measures, or be reluctant to come to healthcare facilities due to fear of infection. The study also revealed that hospital COVID-19 protocols were very strict (2.71 ± 2.43). The women had to pass through one entrance for their temperature check, wash their hands and sanitize them, and wear a face mask even while pushing the baby – which made them uncomfortable. This is consistent with the labor and delivery guideline of Mollard and Wittmaack (2021), which stated that guidelines for maternal care practices should promote the feelings of safety and control, and also the overall experience of women giving birth in hospitals during a pandemic.

The study also revealed that unnecessary delays caused by skilled personnel putting on their protective equipment to attend to women in labor pose a great threat to mother and baby (3.58 ± 3.12). Other participants were displeased that quality care by midwives was disrupted due to COVID-19 protocols, unlike the better care they received during previous pregnancies. They stated that midwives looked anxious and were strict with the protocols, and those who did not believe in the reality of COVID-19 frowned at this attitude. However, it is normal in events such as pandemics that healthcare personnel should apply protective measures to save their own lives too. These finding were in line with the reports of Bradfield et al. (2021) which posited that the COVID-19 pandemic drastically changed the methods of healthcare delivery in so many countries around the globe. Facts on the experience of those re-

ceiving or providing maternal-child care services are crucial to guide practice through this challenging period. Findings from the study also reported restrictions on birth companions and support persons during labor – which could lead to increased fear and neglect (2.96 ± 2.58). This corresponds with the findings of Fetters (2020) who reported that a worldwide pandemic brings multiple layers of logistical and psychological stress to the already stressful period of new parenthood. However, the restrictions on the birth companions and support persons were in line with labor and delivery guidance for COVID-19, as set forth by Boelig et al. (2020), which stated that only a single unchanged support person should remain during labor and delivery, and they must have screened negative for symptoms of COVID-19. As well as this, they can only accompany the birthing mother if the institution has the following: sufficient PPE for the support person, adequate spacing and a care environment in which support people can be appropriately physically distanced from other clients and support persons; and/or the ability to ensure the support person strictly adheres to physical distancing and infection control measures. All these measures were to minimize the risk of COVID-19 transmission. Unfortunately, in this environment, despite the mandatory use of face masks – as recommended by hospital protocol, some close relatives, such as husbands and mothers-in-law, did not abide to the protocol because they did not believe in the existence of COVID-19 or maintained that it is politically motivated.

Conclusions

The outbreak of COVID-19 has caused stress and tension for expectant mothers in Umuahia, Abia State, and in Nigeria. Hence women's main expectations (among others) during childbirth were involvement in making decisions about their care, provision of adequate information on caring for their babies during the pandemic, and the positive attitude of healthcare providers. Despite the concerns affecting the general population, there are specific issues causing increased levels of anxiety among expectant mothers, such as higher risk of contracting COVID-19, vulnerability to severe complications, the risk of mother-to-child transmission, and the potential effects of COVID-19 on the fetus. Thus, all pregnant women and their newborn babies, including those with confirmed or suspected COVID-19 infections, have the right to high quality care before, during, and after childbirth – including mental healthcare.

Recommendations

Based on the findings of the study, the following recommendations can be made; maternity care practices guidelines should promote feelings of safety and control for expectant mothers giving birth in the hospital during a pandemic; maternity care staff should always provide clear, concise information, and compassionate client-centered care to ease women's anxiety about unpredictable policy as the pandemic continues to evolve. There is also a need to build resilience among maternity care staff as this might foster positive emotions to assist them in dealing with anxieties, fears, stress, and other challenges of the pandemic.

Ethical aspects and conflict of interests

The authors have no conflict of interests to disclose.

Očekávání žen ohledně porodu a vnímaný vliv protokolů COVID-19 na porod

Souhrn

Cíl: Studie hodnotila očekávání žen ohledně porodu a vnímané účinky protokolů COVID-19 na porod ve vybraných zdravotnických zařízeních v Umuahia, Abia, Nigérie.

Metodika: Byla použita průřezová deskriptivní výzkumná metoda. Do studie bylo v období od března do prosince 2020 cíleně vybráno tři sta čtyři (304) žen z vybraných zdravotnických zařízení v Umuahii. Jako nástroj pro sběr dat byl použit validovaný dotazník vyvinutý výzkumnými pracovníky. Získaná data byla podrobena deskriptivní statistice četností, průměrů a směrodatných odchylek.

Výsledky: Hlavní zjištění ukázala, že vysoce hodnocená očekávání žen během porodu byla zapojení žen do rozhodování o péči (3,69 ± 3,20), poskytování adekvátních informací o péči o miminko (3,65 ± 3,17) a pozitivní přístup poskytovatelů zdravotní péče (3,59 ± 3,11). Větší počet účastníků plně souhlasil s tím, že lockdown během pandemie vedl k vážným porodním závěrům (3,25 ± 2,98); a zpoždění při dodržování protokolů COVID-19 kvalifikovaným personálem během porodu představuje velkou hrozbu pro matku a dítě (3,58 ± 3,12). Na druhou stranu pozorování sociálního distancování porodními asistentkami (1,57 ± 1,28) a testování žen na covid-19 před přijetím (1,96 ± 1,58) nemělo na porod žádný negativní vliv.

Závěr: Zapojení žen do rozhodování o jejich porodních plánech a péči představuje očekávání žen od jejich porodu. Poskytovatelé zdravotní péče musí těmto očekáváním plně porozumět a poskytovat péči, která je s nimi v souladu. Je také nezbytné, aby informace poskytované ženám v prenatálním období, zejména v době pandemie, byly komplexní a srozumitelné. To by mělo být použito k otevřené komunikaci o problémech, které mohou ovlivnit jejich porodní zkušenost, zejména během pandemie.

Klíčová slova: COVID-19 protokoly; očekávání od porodu; porod; vnímaný efekt; ženy

References

1. Afaya A, Yakong VN, Afaya RA, Salia SM, Adatara P, Kuug AK, Nyande FK (2017). A qualitative study on women's experiences of intrapartum nursing care at Tamale Teaching Hospital (TTH) Ghana. J Caring Sci 6(4): 303–314. DOI: 10.15171/jcs.2017.029.
2. Bell AF, Anderson E (2016). The birth experience and women's postnatal depression: A systematic review. Midwifery 39: 112–123. DOI: 10.1016/j.midw.04.014.
3. Bhavnani V, Newburn M (2010). Left to your own devices: The postnatal care experiences of 1260 first-time mothers. In: Lewis L (Ed.). Fundamentals of Midwifery: A textbook for Students. London: The National Childbirth Trust.
4. Boelig RC, Manuck T, Oliver EA, Di Mascio D, Saccone G, Bellussi F, Berghella V (2020). Labor and delivery guidance for COVID-19. Am J Obstet Gynecol MFM 2(2): 100110. DOI: 10.1016/j.ajogmf.2020.100110.
5. Bradfield Z, Wynter K, Hauck Y, Vasilevski V, Kuliukas L, Wilson AN, et al. (2021). Experiences of receiving and providing maternity care during the COVID-19 pandemic in Australia: A five-cohort cross-sectional comparison. PLoS One 16(3): e0248488. DOI: 10.1371/journal.pone.0248488.
6. Brown SJ, Davey M-A, Bruinsma FJ (2005). Women's views and experiences of postnatal hospital care in the Victorian Survey of Recent Mothers 2000. Midwifery 21(2): 109–126. DOI: 10.1016/j.midw.2004.09.006.
7. Changole J, Bandawe C, Makanani B, Nkanaunena K, Taulo F, Malunga E, Kafulafula G (2010). Patients' satisfaction with reproductive health services at Gogo Chatinkha Maternity Unit, Queen Elizabeth Central Hospital, Blantyre, Malawi. Malawi Med J 22(1): 5–9. DOI: 10.4314/mmj.v22i1.55899.
8. Chen L, Li Q, Zheng D, Jiang H, Wei Y, Zou L, et al. (2020). Clinical characteristics of pregnant women with Covid-19 in Wuhan, China. N Engl J Med 382: e100. DOI: 10.1056/NEJMc2009226.
9. Dzomeku VM, van Wyk BE, Knight L, Lori JR (2018). Exploration of mothers' expectations of care during childbirth in public health centers in Kumasi Ghana. Africa J Nurs Midwifery 20(1): 1–14. DOI: 10.25159/2520-5293/3130.
10. Fetters A (2020). Covid-19 is Upending Parents' Birth Plans. [online] [cit. 2021-01-22]. Available from: https://www.theatlantic.com/family/archive/2020/03/giving-birth-during-coronavirus-pandemic/608320/
11. Huntley BJF, Huntley ES, Di Mascio D, Chen T, Berghella V, Chauhan SP (2020). Rates of maternal and perinatal mortality and vertical transmission in pregnancies complicated by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-Co-V-2) Infections: A Systematic review. Obstet Gynecol 136(2): 303–312. DOI: 10.1097/AOG.0000000000004010.
12. Kamer L (2022). Crude birth rate in Africa 2020, by Country. Society Demographics. [online] [cit. 2021-01-22]. Available from: https://www.statista.com/statistics/1121334/crude-birth-rate-in-africa-by-country/
13. Karimi-Zarchi M, Neamatzadeh H, Dastgheib SA, Abbasi H, Mirjalili SR, Behforouz A, et al. (2020). Vertical Transmission of Coronavirus Disease 19 (COVID-19) from Infected Pregnant Mothers to Neonates: A Review. Fetal Pediatr Pathol 39(3): 246–250. DOI: 10.1080/15513815.2020.1747120.
14. Martin E (2015). Concise Colour Medical. Dictionary. Oxford University Press, 375 p.
15. Mollard E, Wittmaack A (2021). Experiences of women who gave birth in US hospitals during the COVID-19 Pandemic. J Patient Exp 8: 237437352098149. DOI: 10.1177/2374373520981492.
16. Ramoni VL, Xoxi B, Beneventi F, Bellingeri C, Montecucco C, Spinillo A (2020). Efficacy of a screening strategy for the detection of rheumatoid diseases in early pregnancy during COVID-19 pandemic. Lupus, pp. 1–3. DOI: 10.1177/0961203320952848.
17. Rasmussen SA, Jamieson DJ (2020). Caring for Women who are planning a pregnancy, pregnant, or postpartum during the COVID-19 Pandemic. JAMA 324(2): 190–191. DOI: 10.1001/jama.2020.8883.
18. Riley T, Sully E, Ahmed Z, Biddlecom A (2020). Estimates of the potential impact of the COVID-19 pandemic on sexual and reproductive health in low-and middle-income countries. Int Perspect Sex Reprod Health 46: 73–76. DOI: 10.1363/46e9020.
19. Rudman A, Waldenström U (2007). Critical views on postpartum care expressed by new mothers. BMC Health Serv Res 7: 178. DOI: 10.1186/1472-6963-7-178.
20. Srivastava A, Avan BI, Rajbangshi P, Bhattacharyya S (2015). Determinants of women's satisfaction with maternal health care: A review of literature from developing countries. BMC Pregnancy Childbirth 15(97). DOI: 10.1186/s12884-015-0525-0.
21. UNICEF Data (2020). Maternal and Newborn and COVID-19. [online] [cit. 2021-01-22]. Available from: http://data.unicef.org
22. White Ribbon Alliance (2019). Respectful Maternity Care: The Universal Rights of the Childbearing Women. [online] [cit. 2021-01-22]. Available from: www.whiteribbonalliance.org
23. WHO (2018). WHO Recommendations: Intrapartum care for a positive childbirth experiences. Geneva: WHO. [online] [cit. 2021-01-22]. Available from: https://apps.who.int/iris/bitstream/handle/10665/260178/9789241550215-eng.pdf
24. WHO (2019). Trends in maternal mortality 2000 to 2017: estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Geneva: WHO. [online] [cit. 2021-01-22]. Available from: https://apps.who.int/iris/handle/10665/327595
25. WHO (2022). Coronavirus disease (COVID-19): Pregnancy and Childbirth. [online] [cit. 2021-01-22]. https://www.who.int/news-room/q-a-detail/coronavirus-disease-covid-19-pregnancy-and-childbirth