

COVID-19 Pandemic and Birth Experience. The Monopoly of Caesarean Sections. A Critical Realist Review

Maria-Eleni BOUKOURA, Antigoni SARANTAKI

Midwifery Department, Faculty of Health & Caring Sciences, University of West Attica, Athens, Greece

ABSTRACT

With over a million people infected, the global pandemic caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has been growing at an accelerating degree. The rising mortality rate warrants identification and protection of the vulnerable populations in society. Despite the increasing number of published studies on COVID-19 in pregnancy, there are insufficient good-quality data to draw unbiased conclusions with regard to the severity of the disease or specific complications of COVID-19 with reference to the mode of delivery, vertical/peripartum transmission, and complications in neonates, born by infected pregnant women. Data on maternal and perinatal outcomes of women infected with the SARS-CoV-2 are limited to a handful of case reports and series. The sample sizes are small and findings are diverse.

Regarding the mode of delivery in women with suspected or confirmed COVID-19, many studies conclude that the rates of Caesarean Section (CS) are higher in these women, despite the guidelines for vaginal labour. The aim of this critical realist review (CRR) is to investigate this phenomenon as well as the role of midwives in birth experience of women with COVID-19.

Keywords: COVID-19, pregnancy, mode of delivery, caesarean section, midwives' role, stigma.

INTRODUCTION

Coronaviruses are a large family of viruses that might cause infection not only in humans but also in animals (1). In humans, they usually cause mild to moderate upper-respiratory tract illnesses (*i.e.*, common cold) (2). New coronaviruses have recently emerged from animal reservoirs to cause serious and widespread illness

and could be responsible for more serious diseases such as severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS) (1, 3).

SARS-CoV-2 causes coronavirus disease 2019 (COVID-19), which emerged from China in December 2019 and was declared a global pandemic by the World Health Organization on March 11, 2020 (1).

Address for correspondence:
Antigoni Sarantaki, MD, PhD
Tel.: +302105387403
Email: sarantaki.antigoni@gmail.com

Article received on the 16th of March 2021 and accepted for publication on the 14th of June 2021

As of February 7th 2020, the ongoing (COVID-19) pandemic has swept through 216 countries globally and the number of total confirmed cases has exceeded 105.4 million, including almost 2,302,302 deaths, while in Europe the number was almost 35.5 million (4).

Fever, fatigue and dry cough are among the most usual symptoms of COVID-19. Some patients may experience symptoms such as pain all over the body and neck, diarrhea and nasal discharge, which are rarely severe and start gradually. Most patients have minor symptoms similar to influenza (i.e., breathlessness, sore throat and fatigue) and infected cases are isolated and treated. Approximately 80% of patients recover from the illness without requiring specific care (1, 3).

Infection is mild in most cases, but nearly one in six people with COVID-19 have cardiac and respiratory disorders that may progress to pneumonia, acute respiratory distress syndrome and multi-organ failure (2, 3).

Midwives and obstetricians face a new challenge posed by the recent outbreak of COVID-19. In this phase of the epidemic, few data are available on the effect of COVID-19 on pregnant women. The risk of intrauterine and peripartum transmission of the virus to the fetus is also largely unknown. In particular, COVID-19 is a new virus and data are limited, especially with regard to pregnant women, who seem to be at higher risk of severe illness than the general population. Therefore, it is vital for them to take precautions in order to protect themselves against COVID-19, and report suspicious symptoms to their midwives as soon as possible (5).

Only few case reports and clinical series exist on pregnant women infected with SARS-CoV-2 who gave birth (6).

Case studies and research on pregnant women with COVID-19 around the world reveal that these women deliver their babies by CS at unexplainably high rates (7-15). Coronavirus by itself is not an indication for CS and vaginal birth is recommended by the WHO, NHS and RCOG (5, 16, 17). The view of WHO on CS is that it should be performed when it is medically acceptable and health care professionals have to individualize the mode of delivery by considering both the wishes of women and the medical indications (5).

So, the aim of this review is to explore the preferable mode of labour in women with

COVID-19 and the role of midwives in relation to holistic intrapartum physical and mental care of infected women. This review is expected to be used as an educative tool for healthcare providers. In addition, through this report, pregnant women with COVID-19 will learn their rights and will be able to claim them during labor. Consequently, two questions have emerged, which justify to be stated:

- “what is the reason that women with COVID-19 have higher CS rates?”
- “What is the role of midwives in the birth experience of women with COVID-19?”

The appropriate methodology to answer these questions will be identified, as follows.

Methodology

A Critical Realist Review (CRR) is a literature-based methodological approach to critical analysis of health care studies (or any discipline charged with social interventions) that is robust, insightful and essential for the complexities of the 21st century evidence-based health and social care. It also examines social processes, including applicable policies and strategies in order to investigate a particular topic in a progressive and creative manner (18). This approach, underpinned by a critical realist philosophy and methodology, may facilitate students and researchers to employ relevant theoretical insights from a range of disciplines that have necessary contributions to make to our understanding of health and social care practice and provision.

Furthermore, if we take into consideration that midwives are closely linked to social sciences and labor is influenced by many physiological and psychosocial variables which cannot be identified by quantitative methods alone, a critical realist review seems to be the best choice as it provides an interdisciplinary and thorough investigation (19).

Having reported higher rates of CS for women with COVID-19 in numerous studies, despite the official recommendations for vaginal delivery, it was decided to carry out a critical realist review in order to display and establish potential generative mechanisms for this issue. In addition, the COVID-19 pandemic is a social phenomenon beyond a serious health issue, which justifies why CRR is the ideal choice for the study of this topic (20). A narrative review would pro-

duce a version of the current situation, while a systematic review would entail the establishment of strict data collection, inclusion and exclusion criteria (21), which would in turn reduce the flexibility of the study to a large extent (18).

Therefore, a CRR can contribute to generalize knowledge, by shedding light on causal factors that have not been observed factually or are not factually observable (18).

Search strategy and limitations

In this review, a wide range of published articles and references were necessary and we searched through various databases such as the Cochrane Library, PubMed Central, PubMed, along with WHO, NHS, NICE websites, which give official information, guidelines and statistics around COVID-19 and its management during birth. The key words which were used came from the basic questions and moreover, from the literature review itself. In order to provide answers to all submitted questions, the following key search terms were used to recognize the fitting literature: “childbirth”, “labour”, “birth”, “delivery”, “c(a)esarean”, “midwife”, “midwifery”, “COVID-19”, “coronavirus”, “covid2019”, “normal labor”. These were used both separately and in combination with the help of the Boolean administrators (OR, AND, NOT). The synthesis of results and paper selection was a procedure which took place from March 2020 until February 2021.

We identified a gap, as we could not trace a single study that explained the increased CS rates for women with COVID-19. Only the International Confederation of Midwives (ICM) developed advice for midwives about continuity of care for women and their babies throughout childbirth (22). Apart from this, we found no study describing how midwives could improve the intrapartum experience of infected women. The only data concerning CS rates for women with COVID-19 were included in quantitative studies and case reports or series. In two of these studies, it was stated that women with COVID-19 gave birth with CS, due to unknown danger of intrapartum transmission to their baby, through normal labor (23, 24). Behind the inexplicably high rates of CS for these women, fear of vertical transmission and complications are implied. The rationale behind the matter of this CRR is accu-

rately this fear together with that of the unknown triggers stigma (20).

This constraint on existing items has been resolved by extending the search terms (adding: “(high) risk”, “medicalization”, “childbirth”, “antenatal”, “fear”, “stigma”) and by not using severe incorporation and avoidance criteria, as proposed by critical realism, aiming to “keep options open” (18). The only prohibition criteria allude to studies that were not accessible in full content, were not written in English and their summary did not give valuable data. Furthermore, a quality appraisal of studies would further constrain the accessible writing and for this reason, its conduct was not chosen. This choice is supported by the idea that CRRs emphasize on the conceptual contribution of any documentation that will lead to further research rather than qualitative assessment (21). □

RESULTS

The most important explanations were given after a literature review guided to a total of seven relative papers (Table 1). It was resolved to comprise not just papers about women with COVID-19 but high-risk women in general. Three of the selected papers (25-27) analyzed coronavirus from a social point of view and investigated the stigma which related with it. One study mentioned the concept of risk (28), while the medical model with regard to the high percentages of CS was explained in another article (29), and an accurate resolution of the suitable model of midwifery care for high-risk women was described in another report (30).

Three themes were created after formulation of special codes that their grouping was based on their similarities and consistence. The themes included “Effectively advancing normal labor”, “Social stigmatization of people with COVID-19”, and “Risk administration culture” (Table 2). The ‘critical’ component of this type of review is key to its value. A critical review provides an opportunity to ‘take stock’ and evaluate what is of value from the previous body of work (31).

In conclusion, COVID-19-stigma, risk management culture and inadequate support of vaginal birth for women with COVID-19 could explain why the CS percentages among these women were higher. A midwifery model of care and sensitive birth approach in high-risk women

Author(s)	Aim	Design/country	Key findings
Berg (2005)	To describe a construction of the midwifery model of care for pregnant women who are at high risk.	An investigation synthesis of three qualitative interview studies from Sweden	High risk pregnant women's dignity is maintained by the constant presence of midwives through trust, discussion and shared responsibility. So, women will feel that have a sense of control. Embodied knowledge should be used by midwives. This knowledge includes authenticity to oneself, and theoretical, useful, instinctive, and reflective knowledge. In midwifery, it is essential to keep good balance between midwifery and medical perspectives. Also, midwives should maintain the normality and show sensitivity to every woman, individually.
Vivilaki, Antoniou, 2008	To examine the causes for the constant increase in CS percentages and to create strategies to decrease the number CSs	Review article (Greece)	The prevailing medical model affects the percentages of CS. Although CS is a common operation with the most significant long-term consequences for women of childbearing age, the caesarean section rate is rising and this fact indicates a significant health issue. The rising CS rate is a public health problem that is associated with long term effects for the mother and the newborn. Therefore, the need for developing further, or reorganizing the health education antenatal services in primary care in order to meet pregnant information needs regarding CS and all related perinatal health issues, is evident.
Hallgrimsdottir et al., 2017	To explore – through a review of the academic and grey literature – the role of cultural and social narratives around risk, and the responsabilization of both the pregnant woman and medical practitioner in creating this kind of resistance to intervention today.	Discussion paper (Canada)	This paper centers on two directions of increase in percentages of elective CSs: maternal request and health professional crisis. Women and healthcare experts' decision about labor (especially the mode of birth) can be influenced by the function of social narratives of risk. Moreover, the raised percentages of CS in high income countries are pushed by institutional traits and the social framework.
Logie & Turan), 2020	To outline four tensions between COVID19 containment and stigma mitigation, and offer possible ways forward. These four tensions mentioned in the paper include the distance between people, incorrect information, travel containment and engaging stricken communes.	Review article (Canada)	Despite the fact that safe conclusions cannot be clearly made, it is possible that the anxiety of stigmatization from COVID-19 affects psychological health, counting on healthcare professionals. Strategic social identities and manifold health situations should be considered for the understanding and limitation of stigma from COVID-19. A syndetic approximation may be helpful in order to investigate the modes that social imbalances intensify manifold health problems like COVID-19. Constructive, website-based and community related strategies could aim to help those who are more stigmatized by COVID-19 to participate in studies and projects exploring access difficulties set by COVID-19, therapeutic professional roles and/or caregiving, isolation because of quarantine's mental wellbeing implications.
Bruns DP, Kraguljac and Bruns TR, 2020.	To explore the facts of COVID-19, cultural considerations and risk of stigmatizing people infected by COVID-19.	Review article (USA)	Civilization can have an important role in exposure to, early screening and therapy of COVID-19. A change in cultural practices can reduce the transmission of illness. Because of stigmatization, people can face barriers on accessing appropriate health care and problems related to other people's response. Infected people who think or realize they are stigmatized might delay their care due to the fact that people show fear towards the disease. Moreover, large populations could be prejudiced against those infected and frequently people who are stigmatized become victims of violence. Efficient screening and therapy of those infected with COVID-19 is vital for the management of the epidemic. Healthcare professionals must be focused in public health considering suitable civilized methods of education, prevention, treatment and reevaluation.

TABLE 1. Selected papers

Continued on next page

Continued from previous page

Kisely, Warren, McMahon, Dalais, Henry, Siskind, 2020	To examine the psychological effects on clinicians working to manage novel virus-related outbreaks, and successful measures to manage stress and psychological distress	Rapid review and meta-analysis (Australia)	Healthcare professionals who ministered to infected patients had higher levels of post-traumatic or acute stress and mental distress than those who did not. Effective interventions are available to help mitigate the psychological distress experienced by staff caring for patients in an emerging disease outbreak. These interventions were similar despite the wide range of settings and types of outbreaks covered in this review, and thus could be applicable to the current covid-19 outbreak.
Parazzini <i>et al</i> , 2020	To review the available information on mode of delivery, vertical/peripartum transmission, and neonatal outcome in pregnant women infected with SARS-CoV-2.	Systematic review (Italy)	The rate of vertical or peripartum transmission of SARS-CoV-2 is low, if any, for cesarean delivery; no data are available for vaginal delivery. Low frequency of spontaneous preterm birth and general favorable immediate neonatal outcome are reassuring.

Codes	Themes
Social narratives of risk. Women's choice Healthcare experts' decision	Effectively advancing normal labor Social stigmatization of people with COVID-19. Risk administration culture
Stigma towards people with COVID-19. Healthcare providers' stress Peoples' stress with regard to COVID-19.	
Violent reactions against people with COVID-19. Fear regarding COVID-19. Stigmatization of people with COVID-19	

TABLE 2. Codes and themes

could improve birth experience of women with COVID-19 (22, 29, 30, 32). □

DISCUSSION

Real level – Social stigma

COVID-19 is a new, often serious and potentially fatal, infection for humans. People are negatively affected by the unknown and they are afraid of it. This fear is easily linked to “others”. It is reasonable that there is stress, fear and confusion in the public. These factors create harmful stereotypes and stigma (20). The healthcare providers’ fear, fuels stigma (33) and mistrustfulness towards women with COVID-19 or their stigmatization (25-27) may cause the anxiety that professionals experience in high-risk deliveries (33). Consequently, health professionals prefer medicalized deliveries, frequently perform unnecessary interventions and abandon the normal delivery process because of their anxiety and stress (30).

Actual level – Risk management culture

The mode of delivery has frequently been controlled by the medicalization of birth (34) as interventions during childbirth were more frequent

due to the mentality of obstetricians (35). Pregnant women infected with COVID-19 may avoid making decisions about their labor. At the same time, these women may ask for an elective CS because of their worries and fear of labor. Dissemination of accurate information and following evidence-based guidelines must be available at both a regional and organizational level. Midwives strongly support and fight for normal labor and particularly under these circumstances, their role becomes more distinguishable (36). Pregnant women infected with COVID-19 probably get hospitalized or have more interventions because of the obstetricians’ views on the risk of transmission and the fear of possible complications (36). Although the danger of intrapartum vertical transmission of COVID-19 to the fetus is the leading cause for a CS, there is not enough empirical data to support it (23, 24). Thus, it seems that the way women give birth is influenced by the fear of complications. Fear and social stigma are the reasons why women with COVID-19 have numerous interventions during childbirth (20). It is important to note that interventions produce higher risks for maternal and neonatal adverse outcome (37). Data on virus

transmission are substantially based on women who delivered by CS (38).

Empirical level – Vaginal birth is not actively promoted

The woman’s decision is influenced by sociocultural factors (28) and health professionals’ judgement (28). Every woman must be sufficiently informed and updated so as to be involved in clinical decision making for herself and her baby (22). Still, women with COVID-19, due to their fear of labor, should not only have medical care but also psychological support (23, 24). So, all healthcare providers need to recognize how to manage such situations with evidence-based strategies which are available in all hospitals (38). Finally, a midwifery model of care would possibly put under control a woman’s contacts and consequently would limit the transmission of COVID-19 (22). Probably a midwifery led model will prove to be advantageous (30). Midwives, regardless of whether they work in a hospital or in a community setting, have an essential and important role in perinatal care. Thus, in times of health crises, such as the current COVID-19 pandemic, the exclusion of midwives from their key roles and their engagement in other duties may adversely affect both maternal and neonatal outcomes (22). □

CONCLUSIONS

The COVID-19 pandemic has become one of the most important threats to global health the contemporary world has ever seen. Although there is no evidence to suggest an increased risk of a more severe illness if a mother is infected or that the virus can be transmitted to the fetus in the womb, pregnant women are worried about

their pregnancy and the prospect of giving birth during the pandemic.

There are restricted clinical series reporting the impact on infected women during labor. From the limited information gathered about the novel coronavirus and the severely growing burden of the disease, it is vital that scientific information concerning the disease is shared in a concise and practical way.

Careful monitoring of pregnancies with COVID-19 and measures to prevent unnecessary medical interventions are of great importance. Frontline health care givers, including midwives, are at the forefront of COVID-19 response, going beyond their call of duty and play a vital role to assist women to achieve healthy pregnancies and positive birth experiences.

This CRR recommends that the fear of something new as well as that with regard to transmission of COVID-19 influence clinical decision making and might be the dominant reason for high CS rates. For these women, a midwifery model of care could support and promote vaginal delivery with minimal interventions. Every woman has the right to choose the mode of her labor and health professionals, especially midwives, must support these women to claim their rights. □

Conflicts of interest: none declared.

Financial support: none declared.

Acknowledgement: MEB wants to thank Eleni Asimaki for her contribution in developing the theoretical formalism of the present study.

Authors’ contribution: MEB was involved in conceptualization of the presented idea and preparation of draft manuscript. AS was responsible for supervision, critical revision and writing/editing of the final manuscript. All authors read, provided input and agreed upon the final draft.

REFERENCES

1. **World Health Organization.** COVID-19. <http://www.emro.who.int/health-topics/corona-virus/questions-and-answers.html>. Accessed October 2020.
2. **World Health Organization.** Coronavirus disease (COVID-19) <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/coronavirus-disease-covid-19>. Accessed November 2020.
3. **Butler Jennifer.** *What is a coronavirus?* <https://www.navsea.navy.mil/Portals/103/Documents/Resources/Coronavirus/NSC-CoronavirusInformationPaper.pdf?ver=2020-03-13-134613-547>. Accessed February 2021.
4. **World Health Organization.** WHO Coronavirus Disease (COVID-19) Dashboard. <https://covid19.who.int/>. Accessed February 7, 2021.
5. **World Health Organization.** Coronavirus disease (COVID-19): Pregnancy and childbirth. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/q-a-on-covid-19-pregnancy-and-childbirth>.

- Accessed September 2020.
6. **Parazzini F, Bortolus R, Mauri PA, et al.** Delivery in pregnant women infected with SARS-CoV-2: A fast review. *International Journal of Gynecology & Obstetrics* 2020. doi: 10.1002/ijgo.13166.
 7. **Luo Y, Yin K.** Management of pregnant women infected with COVID-19. *Lancet* 2020. doi:10.1016/s1473-3099(20)30191-2.
 8. **Chen H, Guo J, Wang C, et al.** Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: a retrospective review of medical records. *Lancet* 2020;395. doi: 10.1016/S0140-6736(20)30360-3.
 9. **Qiancheng X, Jian S, Lingling P, et al.** Sixth batch of Anhui medical team aiding Wuhan for COVID-19. Coronavirus disease 2019 in pregnancy. *Int J Infect Dis* 2020;95:376-383. doi: 10.1016/j.ijid.2020.04.065.
 10. **Ferrazzi E, Frigerio L, Savasi V, et al.** Vaginal delivery in SARS-CoV-2-infected pregnant women in Northern Italy: a retrospective analysis. *BJOG* 2020;9:1116-1121. doi: 10.1111/1471-0528.16278.
 11. **Elshafeey F, Magdi R, Hindi N, et al.** A systematic scoping review of COVID-19 during pregnancy and childbirth. *Int J Gynaecol Obstet* 2020;1:47-52. doi: 10.1002/ijgo.13182.
 12. **Della Gatta AN, Rizzo R, Pilu G, Simonazzi G.** Coronavirus disease 2019 during pregnancy: a systematic review of reported cases. *Am J Obstet Gynecol* 2020;1:36-41. doi: 10.1016/j.ajog.2020.04.013.
 13. **Zaigham M, Andersson O.** Maternal and perinatal outcomes with COVID-19: A systematic review of 108 pregnancies. *Acta Obstetrica et Gynecologica Scandinavica* 2020;7:823-829. doi: 10.1111/aogs.13867.
 14. **Mullins E, Evans D, Viner RM, et al.** Coronavirus in pregnancy and delivery: rapid review. *Ultrasound in Obstetrics and Gynecology* 2020;5:586-592. doi: 10.1002/uog.22014.
 15. **Zhang L, Jiang Y, Wei M, et al.** [Analysis of the pregnancy outcomes in pregnant women with COVID-19 in Hubei Province]. *Zhonghua Fu Chan Ke Za Zhi*. 2020;3:166-171. Chinese. doi: 10.3760/cma.j.cn112141-20200218-00111.
 16. **RCOG-Royal College of Obstetricians and Gynecologists.** Coronavirus (COVID-19) Infection in Pregnancy. [https://www.rcog.org.uk/globalassets/documents/guidelines/2021-02-19-](https://www.rcog.org.uk/globalassets/documents/guidelines/2021-02-19-coronavirus-covid-19-infection-in-pregnancy-v13.pdf) coronavirus-covid-19-infection-in-pregnancy-v13.pdf. Published February 19,2021. Accessed February 22,2021.
 17. **NHS-National Health Service.** Pregnancy and Coronavirus. <https://www.nhs.uk/conditions/coronavirus-covid-19/people-at-higher-risk/pregnancy-and-coronavirus/>. Accessed November, 2020.
 18. **Edgley A, Stickley T, Timmons S, Meal A.** Critical realist review: exploring the real, beyond the empirical. *Journal of Further and Higher Education* 2016;3:316-330. doi 10.1080/0309877X.2014.953458.
 19. **Walsh D, Evans K.** Critical realism: An important theoretical perspective for midwifery research. *Midwifery* 2014;1:1-6. doi: 10.1016/j.midw.2013.09.002.
 20. **WHO-World Health Organization.** Social Stigma associated with COVID-19. <https://www.who.int/docs/default-source/coronaviruse/covid19-stigma-guide.pdf?#:~:text=Social%20stigma%20in%20the%20context,contact%20with%20the%20virus.> Accessed April,2020.
 21. **Grant MJ, Booth A.** A typology of reviews: An analysis of 14 review types and associated methodologies. *Health Information & Libraries Journal* 2009;26:91-108. doi: 10.1111/j.1471-1842.2009.00848.x.
 22. **ICM-International Confederation of Midwives.** Women's Rights in Childbirth Must be Upheld. During the Coronavirus Pandemic. https://www.internationalmidwives.org/assets/files/news-files/2020/03/icm_statement_upholding-womens-rights-during-covid19-5e83ae2ebfe59.pdf. Accessed September, 2020.
 23. **Yang Z, Wang M, Zhu Z, Liu Yi.** Coronavirus disease 2019 (COVID-19) and pregnancy: a systematic review. *J Maternal Fetal Neonatal Med* 2020. doi: 10.1080/14767058.2020.1759541.
 24. **Chen S, Huang B, Luo DJ, et al.** [Pregnancy with new coronavirus infection: clinical characteristics and placental pathological analysis of three cases]. *Zhonghua Bing Li Xue Za Zhi* 2020;5:418-423. Chinese. doi: 10.3760/cma.j.cn112151-20200225-00138.
 25. **Logie CH, Turan JM.** How Do We Balance Tensions Between COVID-19 Public Health Responses and Stigma Mitigation? Learning from HIV Research. *AIDS Behav* 2020;7:2003-2006. doi: 10.1007/s10461-020-02856-8.
 26. **Bruns DP, Kraguljac NV, Bruns TR.** COVID-19: Facts, Cultural Considerations, and Risk of Stigmatization. *J Transcult Nurs* 2020;4:326-332. doi: 10.1177/1043659620917724.
 27. **Kisely S, Warren N, McMahon L, et al.** Occurrence, prevention, and management of the psychological effects of emerging virus outbreaks on healthcare workers: rapid review and meta-analysis. *BMJ* 2020;369:m1642. doi: 10.1136/bmj.m1642.
 28. **Hallgrimsdottir H, Shumka L, Althaus C, Benoit C.** Fear, Risk, and the Responsible Choice: Risk Narratives and Lowering the Rate of Caesarean Sections in High-income Countries. *AIMS Public Heal* 2017;6:615-632. doi: 10.3934/publichealth.2017.6.615.
 29. **Vivilaki V, Antoniou E.** Caesarean section: the underpinning choice? *HSJ-Health Science Journal* 2008;2:83-88. doi:10.1.1.550.6208&rep=rep1&type=pdf.
 30. **Berg M.** A midwifery model of care for childbearing women at high risk: genuine caring in caring for the genuine. *J Perinat Educ* 2005;1:9-21. doi:10.1624/105812405X23577.
 31. **Grant MJ, Booth A.** A typology of reviews: an analysis of 14 review types and associated methodologies. *Health Info Libr J* 2009;2:91-108. doi: 10.1111/j.1471-1842.2009.00848.x.
 32. **Behruzi R, Hatem M, Goulet L, et al.** Humanized birth in high risk pregnancy: barriers and facilitating factors. *Med Health Care and Philos* 2010;13:49-58. doi: 10.1007/s11019-009-9220-0.
 33. **Scamell M.** Childbirth Within the Risk Society. *Social Compass* 2014;7:917-928. doi:10.1111/soc4.12077.
 34. **Wong CYW, He HG, Shorey S, Koh SSL.** An integrative literature review on midwives' perceptions on the facilitators and barriers of physiological birth. *Int J Nurs Pract* 2017;6. doi: 10.1111/ijn.12602.
 35. **Smith DC, Phillippi JC, Lowe NK, et al.** Using the Robson 10-Group Classification System to Compare Cesarean Birth Utilization Between US Centers With and Without Midwives. *J Midwifery & Women's Health* 2020;1:10-21. doi:10.1111/jmwh.13035
 36. **Vivilaki VG, Asimaki E.** Respectful midwifery care during the COVID-19 pandemic. *Eur J Midwifery* 2020;4. doi:10.18332/ejm/120070.
 37. **Lothian JA.** Healthy birth practice #4: avoid interventions unless they are medically necessary. *J Perinat Educ* 2014;4:198-206. doi: 10.1891/1058-1243.23.4.198.
 38. **Parazzini F, Bortolus R, Mauri PA, et al.** Delivery in pregnant women infected with SARS-CoV-2: A fast review. *Int J Gynecol Obstet* 2020;150:41-46.

