The Potential Impact of COVID-19 Pandemic on the Antenatal Care as Perceived by Non-COVID-19 Pregnant Women: Women’s Experience Research Brief

Malitha Patabendige, MBBS, MD (O&G)1, Madhawa M Gamage, MBBS2, and Asanka Jayawardane, MBBS, MD, M.Phil, MRCOG2

Abstract
We aimed to study the impact of Coronavirus disease 2019 (COVID-19) pandemic on the basic antenatal care received during the. A facility-based descriptive cross-sectional study was conducted and 62 pregnant women were interviewed. A total of 80.6% of mothers were satisfied with the quality of antenatal care they received, ≥ 7 of 10 on visual analogue scales (VAS). The majority of women were not confident to deliver their baby and 58.1% of women showed ≤ 5 of 10 on VAS. Midwife (90.3%) was the commonest source of information. Internet (1.6%) was a poor source. The impact of the COVID-19 pandemic on the quality of antenatal care was significant, and the findings are useful for the policymakers to plan necessary actions.

Keywords
COVID-19, antenatal care, patient satisfaction, patient expectation, medical decision making

Method
A facility-based descriptive cross-sectional study was carried out at antenatal wards in Castle Street Hospital for Women (CSHW), Colombo, Sri Lanka. A conveniently recruited sample of pregnant women admitted to antenatal wards for various obstetric reasons was interviewed during the peak (April 2020) of the COVID-19 pandemic in Sri Lanka. Women with suspected or confirmed COVID-19 cases were excluded.

The study instrument was an interviewer-administered questionnaire prepared to assess the impact on their life and state of antenatal care received with an overall idea about the health care strategies implemented in response to the outbreak. It consisted of 3 sections, section 1 assessed demographic and clinical details, section 2 assessed the impact on the woman’s general well-being and basic antenatal care using 5 questions as

1 Obstetrics and Gynaecology, Castle Street Hospital for Women, Colombo, Sri Lanka.
2 Department of Obstetrics and Gynecology, Faculty of Medicine, University of Colombo, Colombo, Sri Lanka.

Corresponding Author:
Malitha Patabendige, Obstetrics and Gynaecology, Castle Street Hospital for Women, Colombo, Sri Lanka.
Email: mpatabendige@gmail.com
At least any antenatal care service missed on the basic antenatal care during the COVID-19 pandemic trimester (32-40 weeks). Table 1 summarizes the impact cated antenatal period and all of them were in their third participants. The majority (35/62, 56.5
strates the basic demographic and clinical details of the study

A total of 62 antenatal mothers were studied. Table 2 demon-

Results

A total of 62 antenatal mothers were studied. Table 2 demon-

mentioned in Table 1. Section 3 had two 1-10 visual analogue scales (VAS) to study the overall quality of antenatal care received during this period and how confident they felt to deliver their child under these circumstances. There was an open-ended question to inquire about sources of health information related to pregnancy during this period. Ethical approval was obtained from the Ethical Review Committee, CSHW, Colombo, Sri Lanka.

Discussion

This study provides information about the impact of the COVID-19 pandemic on the quality of routine antenatal care received by non-COVID-19 infected pregnant women. The impact of the COVID-19 pandemic on the quality of routine antenatal care received by the non-COVID-19 pregnant women was significant. Most of the mothers were less confident to deliver their child under these circumstances. Previous respiratory epidemics also resulted in major changes and new recommendations in the antepartum, intrapartum, and postpartum care of women (1). Therefore, studies in this regard are important in the present context. The present study gives some important parameters related to women’s experience.

Accordingly, 69.3% had sought information through internet.

Table 1. Demographic and Clinical Characteristics of the Study Participants.

| Demographic characteristics | Median (IQR) |
|-----------------------------|-------------|
| Age (in years)              | 29 (25.8-34.3) |
| Parity                      | 2 (1–2) |
| Monthly family income (in LKR) | 30 000 (20 000-60 000) |
| Gestational age (in weeks)  | 38 (32-40) |
| Occupational                | n (%)      |
| - Employed                  | 15 (24.2) |
| - Unemployed                | 47 (75.8) |
| Educational level           | n (%)      |
| - No formal education       | 5 (8.1) |
| - G.C.E. Ordinary Level passed | 27 (43.5) |
| - G.C.E. Advanced Level passed | 25 (40.3) |
| - University degree or above | 5 (8.1) |
| Clinical characteristics    | n (%)      |
| - Pregnancy complications   | n (%)      |
| - Uncomplicated             | 35 (56.5) |
| - Hypertensive disease      | 8 (12.9) |
| - Gestational diabetes      | 15 (24.2) |
| - Heart diseases            | 2 (3.2) |
| - Small for gestational age | 1 (1.6) |
| - Any other                 | 1 (1.6) |
| - Past medical comorbidities| n (%)      |
| - None                      | 55 (88.7) |
| - Hypertensive disease      | 3 (4.8) |
| - Gestational diabetes      | 2 (3.2) |
| - Renal disease             | 1 (1.6) |
| - Any other                 | 1 (1.6) |
| - Current medications       | n (%)      |
| - Routine iron and vitamin supplements | 50 (80.6) |
| - Insulin/Metformin         | 12 (19.3) |
| - Antihypertensives         | 8 (12.9) |
| - At least any antenatal care service missed due to this COVID-19 epidemic | 43 (69.3) |

Abbreviation: COVID-19, Coronavirus disease 2019.

Table 2. Impact on the Basic Antenatal Care During the COVID-19 Pandemic Among the Participant Pregnant Women.

| Question assessing the impact on basic antenatal care | n (%) |
|------------------------------------------------------|-------|
| 1. Ability to take nutritious food during this epidemic as usual | 56 (90.3)% |
| 2. Found it difficult to travel for clinics           | 15 (24.2)% |
| 3. Ability to get essential vitamins and/or medications | 58 (93.5)% |
| 4. Had inadequate prenatal care during this period   | 15 (24.2)% |
| 5. Missing any necessary blood investigations during this period | 8 (12.9)% |

Assessment using the VAS 1-10

| Opinion on the quality of antenatal care received during this period as assessed with VAS | 8 (7-9.25) |
| Opinion on how confident to deliver their child under these circumstances as assessed with VAS | 5 (3-7) |

Abbreviations: COVID-19, Coronavirus disease 2019; VAS, visual analogue scales.
antenatal care during the lockdown was reported as 24.2%. These findings are important in planning actions amid mitigation measures during future pandemic situations. Most of the current practice guidelines and protocols have been modified trying to address this gap. Promotion of domiciliary care with protective measures has been introduced while restricting hospital or field clinic visits only for the high-risk pregnant women (5–7). Follow-up studies on this regard might demonstrate the impact of such changes and interventions.

Several recent studies have shown that the COVID-19 pandemic has aggravated perinatal anxiety and depressive symptoms among pregnant women worldwide (8–11). These studies have elaborated the need for additional psychological screening for antenatal women. Our mothers were less confident to give birth during this period (median on VAS-5/10). Tadesse et al have reported that only 29.3% have utilized antenatal care completely during the pandemic in Ethiopia (12). However, a retrospective study assessing maternal and neonatal outcomes during the peak and following the pandemic in Ireland have shown no significant negative impact (13). The same cannot be expected from the low- and middle-income countries, and additional measures including promotion of domiciliary care need to be properly implemented.

However, the majority of women in the present study felt to have received a satisfactory antenatal care (VAS-8/10) during this period. With regard to the sources of health-related information for pregnant women, public health midwife was a prominent source (90.3%) and needs to be strengthened further. Others were comparatively less, possibly due to country lockdown and this strengthens feasibility of domiciliary care whenever it is essential. United Nations Population Fund COVID-19 Technical Brief for Antenatal Care Services has formulated a protocol for antenatal care combining telehealth facilities (phone or video chat) to ensure that there is no disruption in service or breakdown in women’s maternity care (14). In this study, the use of internet was poor (1.6%) as a potential source of information. A study assessing the use of the internet for health information seeking among a cohort of outpatient clinic attendees in Sri Lanka has shown a similar figure (1.4%) in 2009 (15). Therefore, the internet and telehealth as a potential sources of giving health information can be further strengthened. A protocol-based approach with protective measures has been described and guidelines have been modified to adapt to this situation (7,16). The impact of these modifications on the maternal and neonatal parameters needs to be assessed regularly during the pandemic to make necessary changes. There is a dearth of literature on antenatal care during the COVID-19 pandemic and the present work becomes one of the preliminary studies.

**Limitations**

Being a single-center study with a small sample size carries a possible selection bias and lack of generalizability as limitations. The value of a control group is important, and it was not possible to get a control group for this study as this pandemic was unpredicted.

**Authors’ Note**

Author MP participated in conception, design, data collection, analysis, and writing/editing. Author MMG participated in data collection and analysis. Author AJ participated in conception and editing. All authors critically revised and edited the manuscript and approved the final submitted version.

**Acknowledgment**

The authors would like to express their sincere gratitude to all the women who participated.

**Declaration of Conflicting Interests**

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

**Funding**

The author(s) received no financial support for the research, authorship, and/or publication of this article.

**ORCID iD**

Malitha Patabendige, MBBS, MD (O&G) https://orcid.org/0000-0002-4092-7092

**References**

1. Lynch MM, Mitchell EW, Williams JL, Brumbaugh K, Jones-Bell M, Pinkney DE, et al. Pregnant and recently pregnant women’s perceptions about influenza pandemic (H1N1) 2009: implications for public health and provider communication. Matern Child Health J. 2012;16:1657-64.
2. Lee DTS, Sahota D, Leung TN, Yip ASK, Lee FFY, Chung TKH. Psychological responses of pregnant women to an infectious outbreak: a case-control study of the 2003 SARS outbreak in Hong Kong. J Psychosom Res. 2006;61:707-13.
3. Taylor M, Raphael B, Barr M, Agho K, Stevens G, Jorm L. Public health measures during an anticipated influenza pandemic: factors influencing willingness to comply. Risk Manag Healthc Policy. 2009;2:9-20.
4. Senanayake H, Goonewardene N, Ranatunga A, Hattotuwa R, Amarasekera S, Amarasinghe I. Achieving millennium development goals 4 and 5 in Sri Lanka. BJOG An Int J Obstet Gynaecol. 2011;118:78-87.
5. Royal College of Obstetricians and Gynaecologists. Coronavirus (COVID-19) Infection in Pregnancy: Information for healthcare professionals, version 11, 24 July 2020.
6. Gynaecologists TRC of M and the RC of O and. Coronavirus (COVID-19) Infection in Pregnancy: Information for healthcare professionals Version. In 2020:1-57.
7. Health M of. Interim Guidelines for Field Maternal and Child Care Services During the Outbreak of Covid-19 Infection [Internet]. Ministry of Health-Sri Lanka; 2020. http://www.epid.gov.lk/web/images/pdf/Circulars/Coronavirus_infection/interim_guidelinesforfieldmaternalchildcareservicesduringtheoutbreakofcovid-19infection.pdf (accessed 1 February 2021).
8. Liu X, Chen M, Wang Y, Sun L, Zhang J, Shi Y, et al. Prenatal anxiety and obstetric decisions among pregnant women in Wuhan and Chongqing during the COVID-19 outbreak: a cross-sectional study. BJOG. 2020;127:1229-40.
9. Ceulemans M, Hompes T, Foulon V. Mental health status of pregnant and breastfeeding women during the COVID-19 pandemic: a call for action. Int J Gynaecol Obstet. 2020;152:146-7.
10. Patabendige M, Gamage MM, Weerasinghe M, Jayawardane A. Psychological impact of the COVID-19 pandemic among pregnant women in Sri Lanka. Int J Gynecol Obstet. 2020;151:150-3.
11. Yan H, Ding Y, Guo W. Mental health of pregnant and postpartum women during the coronavirus disease 2019 Pandemic: a systematic review and meta-analysis. Front Psychol. 2020;11:1-12.
12. Tadesse E. Antenatal care service utilization of pregnant women attending antenatal care in public hospitals during the COVID-19 pandemic period. Int J Women’s Health. 2020;12:1181-8.
13. Mcdonnell S, Mcnamee E, Lindow SW, Connell MPO. The impact of the Covid-19 pandemic on maternity services: A review of maternal and neonatal outcomes before, during and after the pandemic. Eur J Obstet Gynecol Reprod Biol. 255; (2020):172-6.
14. UNFPA. COVID-19 Technical Brief for Antenatal Care Services. UNFPA. 2020;(April):19. https://asiapacific.unfpa.org/en/publications/covid-19-technical-brief-antenatal-care-services (accessed 1 February 2021).
15. Kommalage M. Use of the internet by patients attending specialist clinics in Sri Lanka: a cross sectional study. BMC Med Inform Decis Mak. 2009;9:1-5.
16. Pitale DL. Antenatal care during the COVID-19 pandemic. Int J Reprod Contraception, Obstet Gynecol. 2020;9:10.

Author Biographies

Malitha Patabendige, MBBS, MD (Obs &Gyn), is a senior registrar in Obstetrics and Gynaecology at the Castle Street Hospital for Women, Colombo, Sri Lanka.

Madhawa M Gamage, MBBS, is a research assistant in the Department of Obstetrics and Gynecology, Faculty of Medicine at the University of Colombo, Sri Lanka.

Asanka Jayawardane, MBBS, MD (Obs & Gyn), M.Phil, MRCOG, is a senior lecturer in Obstetrics and Gynecology in the Department of Obstetrics and Gynecology, Faculty of Medicine at the University of Colombo, Sri Lanka.