Journal of Health Science & Education
An open access journal
eSciRes
ISSN 2817-1780
Short Communication JHSE-1-233

Aftermath of COVID-19 pandemic upon maternal deaths in Brazil: even further away from the Sustainable Development Goals

Andreucci CB[1*], Knobel R[2], Menezes MdeO[3], Takemoto MLS[4]
[1]*Department of Medicine, Federal University of São Carlos*
[2]*Department of Gynecology and Obstetrics, Federal University of Santa Catarina, Florianópolis, Brazil*
[3]*Botucatu Medical School, Universidade Estadual Paulista, Botucatu, Brazil*

Keywords: COVID-19, Maternal Mortality, Pregnancy, Postpartum, Sustainable Development

Introduction

The 2030 United Nations (UN) agenda was approved and supported by 193 countries (including Brazil) in 2015 [1,2], comprising 17 Sustainable Development Goals (SDGs) and 169 measurable indicators. The objectives include promoting worldwide sustainable development while ensuring well-being and social justice, preserving natural resources, and addressing population basic needs [2].

The first SDG 3 indicator, "Good Health and Well-Being", proposes reduction in maternal mortality ratio worldwide. In Brazil, the target is 30 deaths per 100,000 live births by 2030 [1]. Maternal mortality (MM) refers to "all deaths occurring during pregnancy or within a period of 42 days after termination of pregnancy from any cause related to or aggravated by the pregnancy or its management, but not due to accidental causes or incidental". MM ratio reflects human development, overall health conditions, access to health care, as well as women´s social condition (4). MM reduction is related to achievement of all SDGs, although inextricably linked to goals One (poverty eradication), Four (quality education) and Five (gender equality) [3-5].

Before the pandemic, obstetric health care in Brazil was already precarious. MM decline have been occurring since 2009, but at a slow and irregular pace [6]. The lack of public investments in health and social inequalities were aggravated after the 2016 parliamentary coup and during Bolsonaro´s federal government [7,8]. The 2019 Third Civil Society report of the 2030 Agenda for Sustainable Development [9] pointed out the increase in maternal and infant mortality after 2016, and the worrisome reduction in children and adults' immunization rates. Additionally, lack of intensive care unit (ICU) beds as well as obstetric-specialized ICUs, delays in treating and transferring pregnant and postpartum individuals to tertiary hospitals, irrational use of obstetric interventions (mainly caesarean section) were reported as factors aggravating pregnant people health conditions [4,10,11].

SDG target 3 is "Strengthen the capacity of all countries, particularly developing countries, for early warning, risk reduction and management of national and global health risks". In retrospect, the world was not prepared for the COVID-19 global menace. In many countries, the response to pandemic challenges was to increase funding in social and health services. On the opposite direction, resources for health, education, social protection, science, technology, gender and racial equality, and environmental protection were reduced in Brazil through the weakening of regulatory agencies and the promotion of austerity policies, even during the worst phase of the pandemic [8]. In addition, the federal government denied the severity of coronavirus infection and criticized containment measures, such as mask use, social isolation, and vaccines, both in the media and through official communications [12].

At the onset of the coronavirus pandemic in 2020, pregnant and postpartum individuals did not appear to be at increased risk of severe COVID-19 or death. However, after the first few months, Brazilian and Mexican data showed more severe infection outcomes, including death, in the obstetric population [13,14]. The different outcomes seemed to be related to local health access barriers and poor quality of care [11,13]. Overall, COVID-19-related maternal deaths occur more frequently in low- and middle-income countries [14] as well as among ethnic minorities and more vulnerable social groups [15,16].

In Brazil, COVID-19 is associated with high prevalence of negative outcomes among pregnant and postpartum individuals, including admission to ICU, invasive ventilation, and death [13,14]. By the end of 2021, more than 2,390 pregnant and postpartum Brazilian individuals had died from COVID-19 [17].

To estimate the impact of COVID-19 in the post-pandemic MM, we obtained the number of live births and obstetric deaths from 2015 to 2021 using official Brazilian data [18]. Data for 2021 are still provisional, and death numbers are probably underestimated. We calculated the maternal mortality coefficient (MMC) by year. MMC excludes deaths from incidental and accidental causes, but we included those deaths considering that violence against girls and women, as well as suicides, increased during the pandemic [3,4]. We calculated the mortality rate for all pregnant and postpartum individuals, i.e., Obstetric Population Mortality Coefficient (OMC), using the same denominator (number of live births). Pre-pandemic data from 2015 to 2019 (pre-pandemic period) were plotted at Excel®, and an extrapolation of MMC was used to estimate the expected MMC without the COVID-19 pandemic, applying the AAA function of Exponential Smoothing (ES). The extrapolated curve was compared to the available 2020-2021 data (post-pandemic period). We also analysed the causes of deaths in the obstetric population in 2021 [18].

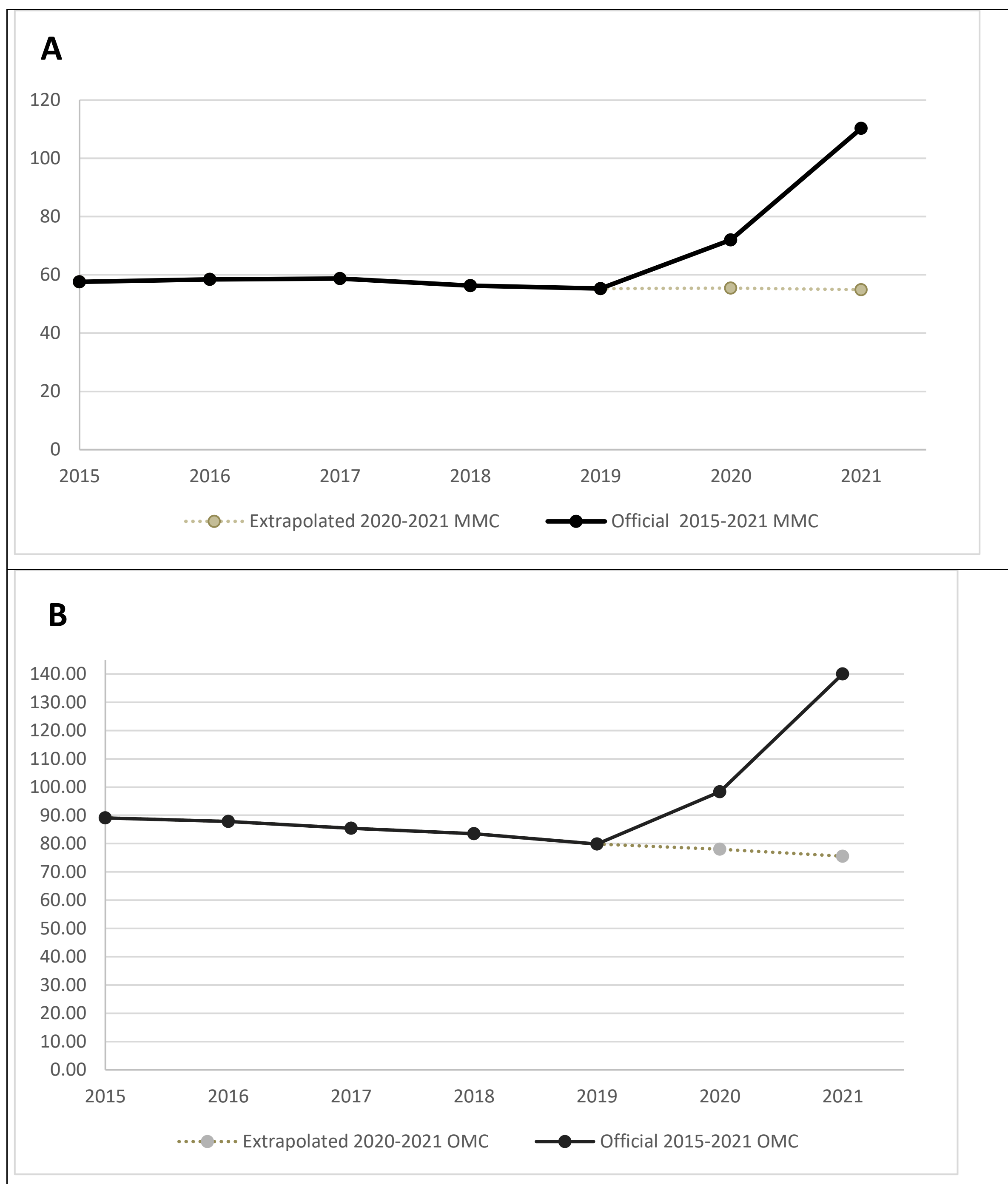

Figure 1: Maternal Mortality Coefficient (MMC) and extrapolation of the Maternal Mortality Coefficient for 2020-2021 using 2015-2019 data. (A) Obstetric Population Mortality Coefficient (OMC) and extrapolation of the Coefficient of Obstetric Mortality for 2020-2021 using 2015-2019 data (B).

Figure 1 shows the MMC (A) and the obstetric deaths coefficient (B) using actual data and extrapolated curves. Data correspond to vital statistics without any correction factor. Please note that the extrapolation only includes data from previous years, and additional intervenient factors were not considered.

Despite so many maternal deaths in 2020, the beginning of COVID-19 immunization in 2021 raised hopes of mitigating the pandemic consequences. The year was marked by distribution of coronavirus vaccines worldwide. Initially, the WHO recommended that pregnant individuals “could” be vaccinated if they were healthcare professionals or had

comorbidities [19]. Notwithstanding, immunization during pregnancy began in December 2020 in the US [20]. In Brazil, although delays due to misguided public policies, vaccination started in April 2021 for high-risk groups, including people with comorbidities such as diabetes, obesity, and hypertension, among others, in addition to health professionals. Regardless the high incidence of death and serious illness in the obstetric population, they were included in the priority vaccination only in July 2021. In addition, vaccine hesitancy has been greater among pregnant people, due to the dissemination of false media information on the safety for the baby and repercussions on fertility [21,22], hesitation to prescribe or non-prescription by health professionals [23], lack of incentives for vaccination by the government [24], and socioeconomic vulnerability [22]. In Brazil, the intention to get vaccinated is associated with higher education, perception of disease risk, previous immunization for influenza, and political inclination [25,26].

Among the causes of death in 2021, there were 1,510 cases classified as "maternal infectious diseases complicating pregnancy, childbirth and the postpartum period". However, the number of deaths is lower than the 1,718 deaths of pregnant or postpartum individuals registered in the 2021 SIVEP Flu Database [17]. The most frequent causes of maternal deaths still are hypertension, haemorrhage, and infections, the leading direct obstetric causes in low-income countries [4].

Deaths from external causes in 2021 are noteworthy: 47 related to road traffic (vehicles accidents and roadkill), 30 from self-inflicted injuries or poisoning (higher figures than in previous years), 49 from violence, and 8 from undetermined external causes. Such deaths of pregnant and postpartum individuals are of concern for not being acknowledged as related to pregnancy. Furthermore, they widen the gap to achieve two of the SDG 3 targets in Brazil: "By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being, male and female workers' health, and prevent suicide, significantly changing the upward trend" and "by 2030, halve the number of global deaths and injuries from road traffic accidents" in addition to the SDG 16 "Peace, Justice and Effective Institutions", whose first goal "Significantly reduce all forms of violence and related death rates, everywhere, including by reducing by 1/3 the rates of femicide and homicide of children, adolescents, young people, black, indigenous people, women and LGBT".

The increase in the suicide rate during the pandemic has been widely reported in the media, but hard data are scarce to stablish the association. However, several population groups, such as racial minorities, adolescents, and the elderly, seemed to be more susceptible to commit suicide during the lockdown period [27–29]. We found no studies on the suicide prevalence in the obstetric population, and we believe that such data need to be further investigated.

The raise of violence against women and in cases of feminicide were reported both before [26] and during the pandemic [30]. Among Bolsonaro´s government political flags were the relaxation of the regulation of civilian acquisition, possession, and use of firearms [31].

The Covid-19 pandemic in Brazil under a government that showed no commitment to the UN SDGs was devastating for women's health, leading to significant increase in maternal deaths. Brazil is among the countries most distanced from the 2030 Agenda [8], and the raise in maternal deaths reflects the gap. We reached the year 2023 under a new federal government, with the pandemic under certain control (74 maternal deaths due to severe acute respiratory syndrome in 2022, and one death reported up to March 2023). Whether maternal mortality will return to pre-pandemic levels, or the decrease in the number of maternal deaths will finally accelerate, remain to be seen. We must compromise to resume compliance with the 2030 Agenda, and "leave no one behind" [2] offering broad and impartial health and reproductive planning access, timely and effective care, and securing referral for pregnant and postpartum individuals when necessary.

Funding

No funding is reported for this paper.

References

1. Instituto Brasileiro de Geografia e Estatística (2023) Indicadores Brasileiros para os Objetivos de Desenvolvimento Sustentável. Objetivos de Desenvolvimento Sustentável.
2. United Nations (2015) Transforming our world: The 2030 Agenda for Sustainable Development. United Nations, New York.
3. Freitas-Júnior RA (2020) Avoidable maternal mortality as social injustice. Revista Brasileira de Saúde Materno Infantil 20(2): 607-614.
4. Pacagnella R, Nakamura-Pereira M, Gomes-Sponholz F, et al. (2018) Maternal Mortality in Brazil: Proposals and Strategies for its Reduction. Revista Brasileira de Ginecologia e Obstetrícia / RBGO Gynecology and Obstetrics 40(09): 501-506.
5. Moreira MR, Kastrup E, Ribeiro JM, et al. (2020) O Brasil rumo a 2030? Percepções de especialistas brasileiros(as) em saúde sobre o potencial de o País cumprir os ODS Brazil heading to 2030. Saúde em Debate 43: 22-35.
6. Alkema L, Chou D, Hogan D, et al. (2016) Global, regional, and national levels and trends in maternal mortality between 1990 and 2015, with scenario-based projections to 2030: a systematic analysis by the UN Maternal Mortality Estimation Inter-Agency Group. Lancet 387(10017): 462–474.
7. Mendes A, Melo MA, Carnut L (2022) Análise crítica sobre a implantação do novo modelo de alocação dos recursos federais para atenção primária à saúde: operacionalismo e improvisos. Cadernos de Saúde Pública 38: e00164621.
8. Grupo de Trabalho da Sociedade Civil para a Agenda de 2030 (2021) V Relatório Luz da Sociedade Civil Agenda 2030 de Desenvolvimento Sustentável Brasil (No. 5) Grupo de trabalho da Sociedade Civil, Brasil, pp: 124.

9. Grupo de trabalho da Sociedade Civil (2019) III Relatório Luz da Sociedade Civil da Agenda 2030 de desenvolvimento sustentável (No. 3) Grupo de trabalho da Sociedade Civil, Brasil, pp: 92.
10. Paim JS (2019) Os sistemas universais de saúde e o futuro do Sistema Único de Saúde (SUS). Saúde em Debate 43: 15-28.
11. Andreucci CB, Knobel R (2021) Social determinants of COVID-19-related maternal deaths in Brazil. Lancet Reg Health Am 3: 100104.
12. Lancet T (2020) COVID-19 in Brazil: "So what?" The Lancet 395(10235): 1461.
13. Nakamura-Pereira M, Knobel R, Menezes MO, et al. (2021) The impact of the COVID-19 pandemic on maternal mortality in Brazil: 523 maternal deaths by acute respiratory distress syndrome potentially associated with SARS-CoV-2. Int J Gynaecol Obstet 153(2): 360-362.
14. Nakamura-Pereira M, Andreucci CB, de Oliveira Menezes M, et al. (2020) Worldwide maternal deaths due to COVID-19: A brief review. International Int J Gynaecol Obstet 151(1): 148-150.
15. Santos DdeS, Oliveira MMde, Andreucci CB, et al (2021) Disproportionate impact of COVID-19 among pregnant and postpartum Black Women in Brazil through structural racism lens. Clin Infect Dis 72: 2068-2069.
16. Knight M, Bunch K, Vousden N, et al. (2020) Characteristics and outcomes of pregnant women hospitalised with confirmed SARS-CoV-2 infection in the UK a national cohort study using the UK Obstetric Surveillance System (UKOSS). BMJ 369: m2107.
17. Michels BD, Iser BPM (2022) Maternal Mortality by COVID-19 in Brazil: updates. Rev Bras Saude Mater Infant 22: 443–444.
18. DATASUS (2022) Informações de Saúde (TABNET) – DATASUS. Tabnet Informações de Saúde.
19. World Health Organization (WHO) (2021) The Pfizer BioNTech (BNT162b2) COVID-19 vaccine: What you need to know.
20. Shimabukuro TT, Kim SY, Myers TR, et al. (2021) Preliminary Findings of mRNA Covid-19 Vaccine Safety in Pregnant Persons. N Engl J Med 384(24): 2273-2282.
21. Goncu Ayhan S, Oluklu D, Atalay A, et al. (2021) COVID-19 vaccine acceptance in pregnant women. Int J Gynaecol Obstet 154(2): 291-296.
22. Badell ML, Dude CM, Rasmussen SA, et al. (2022) Covid-19 vaccination in pregnancy. The BMJ 378: e069741.
23. Tiedje AR, Knobel R, Pogere A, et al. (2022) Practice of Obstetricians of Santa Catarina: Prevention of COVID-19 in Pregnant and Postpartum Women Prática de Obstetras de Santa Catarina: Prevenção da COVID-19 em Gestantes e Puérperas. Journal of Health Science 24(2) 144-151.
24. Gramacho WG, Turgeon M (2021) When politics collides with public health: COVID-19 vaccine country of origin and vaccination acceptance in Brazil. Vaccine 39(19): 2608-2612.
25. Nery Jr N, Ticona JP, Cardoso CW, et al. (2022) COVID-19 vaccine hesitancy and associated factors according to sex: A population-based survey in Salvador, Brazil. PLOS ONE 17(1): e0262649.
26. Paschoalotto MA, Costa EP, Almeida SV, et al. (2021) Running away from the jab: factors associated with COVID-19 vaccine hesitancy in Brazil. Rev Saude Publica 55: 97.
27. Fernandez-Fernandez J, Jiménez-Treviño L, Seijo-Zazo E, et al. (2023) Trends in the incidence of hospital-treated suicide attempts during the COVID-19 pandemic in Oviedo, Spain. Eur Psychiatry 66(1): e23.
28. Lund JJ, Tomsich E, Schleimer JP, et al. (2023) Changes in self-harm and suicide in California from 2017-2021: a population-based study. Res Sq rs.3.rs-2395128.
29. Chen YY, Yang CT, Yip PSF (2023) The increase in suicide risk in older adults in Taiwan during the COVID-19 outbreak. Journal of Affective Disorders, 327: 391-396.
30. Ribeiro-Junior MAF, Néder PR, Augusto SDS, et al. (2021) Current state of trauma and violence in São Paulo - Brazil during the COVID-19 pandemic. Revista do Colégio Brasileiro de Cirurgiões 48: e20202875.
31. Fernandes E, Soares TB (2020) Discurso da luta contra a violência: o porte de armas e os seus efeitos de sentido. Entremeios (Pouso Alegre) 23(23): 43-58.

***Corresponding author:** Carla Betina Andreucci, Ph.D., Department of Medicine, Federal University of São Carlos, Brazil; e-mail: carlapolido@ufscar.br

Received date: March 25, 2023; **Accepted date:** June 20, 2023; **Published date:** April 08, 2023

Citation: Andreucci CB, Knobel R, Menezes MdeO, Takemoto MLS (2023) Aftermath of COVID-19 pandemic upon maternal deaths in Brazil: even further away from the Sustainable Development Goals. *J Health Sci Educ* 7(1): 233.

Copyright: Proctor MM (2023) Aftermath of COVID-19 pandemic upon maternal deaths in Brazil: even further away from the Sustainable Development Goals. J Health Sci Educ 7(1): 233.