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REVIEW ARTICLE

The impact on COVID-19 care in the pregnancy-puerperal cycle

El impacto en la atención de la COVID-19 en el ciclo embarazo-puerperio

O impacto na assistência à COVID-19 no ciclo gravídico-puerperal

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Abstract

The aim was to evaluate the scientific evidence on the impact of COVID-19 on the pregnancy and puerperal cycle. Literature review in the Virtual Health Library (VHL) in the period 2019 and 2020. This research evidenced the impact of the COVID-19 pandemic on pregnant and postpartum women. It is concluded that to improve the quality of nursing care and promote access to prenatal and postpartum monitoring, this study suggests prioritizing women in the pregnancy-puerperal cycle, particularly patients infected with the SARS-CoV-2 virus, with in order to avoid possible complications during the period of childbirth and puerperium, thus prioritizing the bond of the mother-child binomial.

Descriptors: Impact; COVID-19; Pregnant; Postpartum Women; Nursing Care.

Resumén

El objetivo fue evaluar la evidencia científica sobre el impacto del COVID-19 en el ciclo gestacional y puerperal. Revisión de la literatura en la Biblioteca Virtual en Salud (BVS) en el período 2019 y 2020. Esta investigación evidenció el impacto de la pandemia de COVID-19 en las gestantes y puérperas. Se concluye que para mejorar la calidad de la atención de enfermería y promover el acceso al control prenatal y posparto, este estudio sugiere priorizar a las mujeres en el ciclo embarazo-puerperio, en particular a las pacientes infectadas por el virus SARS-CoV-2, con el fin de evitar posibles complicaciones durante el período del parto y puerperio, priorizando así el vínculo del binomio madre-hijo.

Descriptores: Impacto; COVID-19; Embarazada; Período Periparto; Cuidado de Enfermera.

Resumo

Objetivou-se avaliar as evidências científicas sobre o impacto da COVID-19 no ciclo gravídico e puerperal. Revisão da literatura na Biblioteca Virtual em Saúde (BVS) no período de 2019 e 2020. Esta pesquisa evidenciou o impacto da pandemia de COVID-19 sobre gestantes e puérperas. Conclui-se que para melhorar a qualidade da assistência de enfermagem e promover o acesso ao acompanhamento de pré-natal e puerpério, este estudo sugere a priorização das mulheres no ciclo gravídico-puerperal, particularmente pacientes infectadas pelo vírus SARS-CoV-2, com intuito de evitar prováveis complicações durante o período de parto e puerpério, priorizando assim o vínculo do binômio mãe-filho.

Descritores: Impacto; COVID-19; Gestante; Período Periparto; Cuidados de Enfermagem.

Introduction

On December 31, 2019, China notified the World Health Organization (WHO) that cases of pneumonia of unknown etiology had arisen in the city of Wuhan, located in Hubei province. On January 9, 2020, the new coronavirus causing the so-called Severe Acute Respiratory Syndrome - Coronavirus (SARS-CoV-2) was identified. It is the most recent agent of human infection called COVID-19[1].

After three months, SARS-CoV-2 reached more than 200 countries and reached 5.9 million cases in a frantic way[2]. As of 14 July 2021, more than 187 million cases of COVID-19 have been confirmed, incurring more than 4 million deaths, with a rapid daily increase in some countries[3].

This new coronavirus is the 7th member of a family of coronaviruses responsible for infecting humans. A member of the sarbecovirus subgenus and with genetic material composed of single stranded RNA, it has characteristics similar to SARS-CoV and MERS-CoV[4].

SARS-CoV-2 virus causes respiratory infection that leads to viral pneumonia and acute respiratory distress syndrome in some patients[4,5]. It can also cause a picture of acute lung injury, associated with acute, non-hydrostatic pulmonary edema and severe hypoxemia. Incubation time varies from 2 to 14 days (generally 5 days) from infection, triggering mild respiratory distress, myalgia, diarrhea and pyrexia[4-6], with symptoms very similar to flu-like syndrome caused by the influenza virus.

The great pandemic outbreak of COVID-19 has spread rapidly throughout the world, causing great concerns to governments as well as the population in general. Adding uncertainties in different spheres, it has become one of the biggest challenges ever faced on a global scale in recent times[3-6].

According to the panel of cases of coronavirus disease 2019 (COVID-19) in Brazil, created by the Ministry of Health, more than 19 million cases and 534 thousand deaths have already been recorded3. From the beginning, one of the biggest challenges for the Brazilian scientific community concerns the lack of information about the characteristics of this new virus and its behavior in a society with different sociodemographic contexts (as in Brazil)[7].

Among risk factors and groups that are more vulnerable to more severe involvement by COVID-19, chronic non-communicable diseases (NCDs) such as diabetes mellitus, cardiovascular diseases, immunocompromised individuals, chronic lung diseases, obese and elderly (over 60 years) deserve to be highlighted[4-6]. Pregnant women also make up the highest risk group for the most severe involvement from the SARS-CoV-2 virus infection. In this sense, pregnant women need more attention and care because, during this chaotic pandemic period, prenatal care and obstetric consultations cannot be neglected, as this virus can cross the transplacental barrier[1,4,6,8,9].

The new virus and the disease COVID-19 present mysteries and challenges to the scientific community. In particular, consequences for the pregnant woman and, later, for the mother-child binomial still remain without scientific evidence confirmed via cohort studies. In this sense, research encompassing birth cohorts from mothers who contracted the SARS-CoV-2 virus during this pandemic becomes crucial[1].

Given the history of previous pandemics, it is advisable to focus and develop rapid strategies that capture the long-term consequences of this disease in the pregnancy period. Regarding the scientific evidence of the impact of COVID-19 on the pregnancy-puerperal cycle, it was observed that pregnant women are more vulnerable to the symptoms of the disease, which can result in complications such as: spontaneous abortion, fetal distress, premature birth, premature rupture of membranes and restriction in uterine growth[1].

In the scientific literature, studies have already shown vertical transmission in several countries around the world. In tests performed on newborns from postpartum women affected by the virus, studies confirmed that NBs were born with positive serology for SARS-CoV-2[1,5,9].

Among the main care for pregnant women during the pandemic, contamination by SARS-CoV-2 should be avoided by adopting social distancing measures and adequate hygiene conditions. Also important is the rapid recognition of COVID-19 in patients admitted to healthcare facilities via polymerase chain reaction (PCR) testing for SARS-CoV-2 already at patient admission. Other necessary measures include the use of a mask and isolation of pregnant women with suspected COVID-19[3,5].

The great challenge for health professionals in hospital care (particularly in Brazil) lies in the care and quality of care provided to pregnant women affected by COVID-19, as well as in the care of the team itself in the correct process of dressing, in the correct use of personal protective equipment and their availability at health institutions[3,5].

Conjecturing the obstetric needs in this pandemic period, the main objective of the present study is to help nursing professionals to expand their knowledge of the scientific evidence now available regarding the impact of COVID-19 on the pregnancy-puerperal cycle. The goal is to enable the quality of care as well as the safety of pregnant women and professionals involved in health care.

Methodology

An integrative literature review was adopted as this method allows for the contemplation of evidence-based practice, which is of paramount importance to support quality nursing care. This method aims to condense knowledge and integrate results from several studies on the intended topic[10].

The integrative review methodology is divided into 6 phases, namely: (1) elaboration of the guiding question, (2) literature search or sampling, (3) data collection, (4) critical analysis of the included studies, (5) discussion of results and (6) presentation of the integrative review. These phases allow a better visualization of the available content, leading the researcher to his objective in order to confirm or refute his hypothesis[10,11].

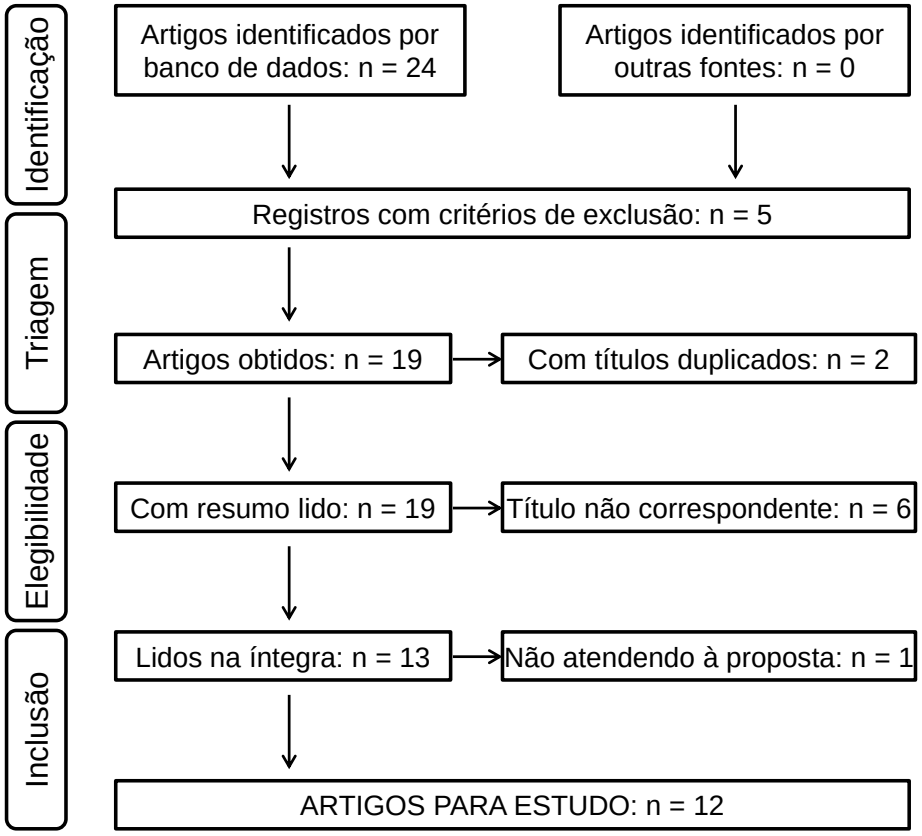
To define the guiding question, the acromion PICO was used, which consists of: (P) target population, (I) intervention used, (C) comparison between types of intervention or groups, (O) expected results. The present

study considered: P = pregnant and postpartum women affected by COVID-19, I = care management; C = the group defined in 'P' did not involve comparative groups and O = evolution of the puerperal pregnancy cycle[11]. This integrative review sought to answer the following question: What is the impact of the COVID-19 pandemic on the pregnancy-puerperal period and on the management of care for this population?

To conduct the research, it was decided to survey the bibliographic material along with search sources in electronic databases. As the topic chosen for the review is still very scarce, it was decided to use the Virtual Health Library (VHL) database, in order to provide an investigation with a greater range of scientific productions on this topic. For this, and in the period between September and November 2020, the following Boolean markers and MeSHs (tw: (nursing care)) OR (tw: (SARS-COV-2)) AND (tw: () were combined using a Boolean equation. SARS-COV)) AND (tw: (pregnancy))[11].

The PRISMA strategy (Preferred Reporting Items for Systematic reviews and Meta-Analyses) guided the selection and presentation of the results and research report, as shown in Figure 1. Thus, the titles and abstracts of the articles found and analyzed were read, for the subsequent choice of which articles would be part of the research[11].

Figure 1. Flowchart of the steps referring to the search for evidence in the databases, according to PRISMA. Jundiaí, SP, Brazil, 2021



When there were doubts, the articles were submitted for a 2nd phase characterized by a detailed reading to confirm their relevance to the research question; if so, relevant data were withdrawn. In addition, in the 3rd phase, the results were checked and disagreements were resolved. The investigation of the results took place in a descriptive way, with expositions of the synthesis of each study included in the integrative review and comparisons between the included studies, with a focus on answering the guiding question.

In the VHL database, 24 articles were found whose abstracts were read in full. Nineteen articles were then selected whose contents contemplated the research question. After reading the abstracts, 7 articles were excluded, either because (6) they did not address any aspect that could clarify the research problem, or because (1) it was itself an integrative review. At the end of the analytical reading of the articles (in full) and after the exclusions, the sample consisted of 12 articles meeting all the inclusion criteria through Boolean equation and selected as shown in Chart 1.

For sample selection, the following inclusion criteria were adopted: publication in 2020; full-text and full-text articles; English, Spanish or Portuguese languages; peer review; and thematic related to the pregnancy-puerperal period and COVID-19. In terms of exclusion criteria, the following were not considered: repeated articles; beyond the period; language other than English, Spanish or Portuguese; publications in the form of theses, dissertations, editorials, reviews, manuals or articles not addressing the proposed theme. The time cut chosen was September-November 2020, with a view to analyzing the production on the subject in the current scenario according to the data analyzed.

Results

The final sample consisted of 12 articles, which were organized in the order of discussion presented below, in order to elucidate the research problem and meet the demand of the objective of the present study.

Chart 1. Presentation of articles in terms of author / year / country, methodological design, sample and objectives. Jundiaí, SP, Brazil, 2021

Author(s). Country. Year	Title	Objectives	Results
Fuenzalida JC, Solari CG, Farías MJ, Navaes R, Poblete JAL. Chile. 2020	Evaluación de um modelo remoto de seguimento de pacientes embarazadas y puérperas com infección por SARS-COV-2	To assess the satisfaction of postpartum women with remote care for the diagnosis of SARS-CoV-2.	With 94.5% of responses, about 80% of pregnant women had their needs met, and 60% of them prefer mixed care. Which shows acceptable levels of satisfaction.
Peahl AF, Smith RD, Moniz MH. USA. 2020	Prenatal care redesign: creating flexible maternity care models through virtual care	To verify the experience in transitioning to a new model of prenatal care with 4 in-person visits, 1 ultrasound visit and 4 virtual visits.	The redesign of antenatal care has broad applications beyond the pandemic.
Pallangyo E, Nakate MG, Maina R, Fleming V. USA. 2020	The impact of covid-19 on midwives' practice in Kenya, Uganda and Tanzania: A reflective account	Check methods of coping with the pandemic in the countries in question, as well as the actions of midwives and health professionals in the control and care of patients and their families.	Reduction in the frequency of contraception due to fear of exposure to COVID-19 in health facilities, separation from their families (quarantine), undesirable outcomes - stillbirths, neonatal and maternal deaths -, adverse outcomes for the baby and lack of prenatal care.
Choi KR, Records K, Low LK, Alhusen JL, Kenner C, Bloch JR, et al. USA. 2020	Promotion of Maternal-Infant Mental Health and Trauma-informed Care During the COVID-19 Pandemic	Offer recommendations on the care that should be provided, as well as social and mental support for pregnant women during the pandemic.	Nursing plays a vital role in protecting and guaranteeing the mental health rights of pregnant women and their babies in a holistic way.
Bender WR, Srinivas S, Coutifaris P, Acker A, Hirshberg A. USA. 2020	The psychological experience of obstetric patients and health care workers after implementation of universal SARS-COV-2 testing	The research describes a study program describing hospitalization and early postpartum as well as psychological experience for asymptomatic obstetric patients tested for SARS-COV-2.	318 women were tested for COVID-19, of whom 75% reported negative in-hospital experiences, 34.4% reported increased postpartum anxiety, and only 27.6% found the test result reassuring. It was seen that job satisfaction and anxiety among professionals.
Liang H, Acharya G. USA. 2020	Novel coronavirus disease (COVID-19) in pregnancy: What clinical recommendations to follow?	Provide adequate clinical management and support to patients, while protecting healthcare professionals.	Care guidelines will evolve as more data become available, with the need to prioritize the continuing education of health professionals and care for pregnant women based on the scientific evidence of this virus.
Coxon K, Turienzo CF, Kweekel L, Goodarzi B, Brigante L, Simon A, et al. European countries. 2020	The impact of the coronavirus (COVID-19) pandemic on maternity care in Europe	The aim is to share experiences, show commonalities and differences where they exist, and reflect on the impact of COVID-19 on maternity care in Europe, now and in the coming months.	Evidence informs that the effective use of PPE and the ability to prevent the transmission of respiratory diseases are recognized as incomplete and containing uncertainties. Where the team has been tested, the results appear to be variable.
Remaeus K, Savchenko J, Wendel SB, Gidlöf SB, Graner S, Jones E, et al. Sweden. 2020	Characteristics and short-term obstetric outcomes in a case series of 67 women test-positive for SARS-CoV-2 in Stockholm	To describe the clinical characteristics of women and their 68 newborns, in addition to reporting short-term maternal and neonatal outcomes.	Preterm birth occurred in 19% of women, most of whom received medical advice. Another 15% were due to the severe coronavirus.
Kang Z, Hong C, Yang L. China. 2020	Patients With COVID-19 Undergoing Cesarean Deliveries: Adapting the OR Suite and Perioperative Care to Prevent Transmission	Share experiences in providing infection prevention and control measures for pregnant women with COVID-19 undergoing cesarean deliveries in the hospital.	RT-PCR test results were positive for SARS-COV-2 in all six patients before cesarean delivery. The RT-PCR test was performed again approximately one week later and the results were negative for all six patients at that time.
Schwartz DA, Graham AL. USA. 2020	Potential Maternal and Infant Outcomes from Coronavirus 2019-nCoV (SARS-CoV-2) Infecting Pregnant Women: Lessons from SARS, MERS, and Other Human Coronavirus Infections	Anticipation of possible complications in pregnant and neonatal women with SARS-CoV-2, based on known MERS and SARS infections.	Postpartum women should be considered high risk. Specialized care should be provided to prevent complications.
Paz MMS, Almeida MO, Cabral NO, Assis TJF, Mendes CKTT. Brazil. 2020	Barreiras impostas na relação entre puérperas e recém-nascidos no cenário da pandemia da COVID-19	Analysis of conditions for breastfeeding in order to maintain the bond between mother and fetus.	Breastfeeding must be maintained, despite indications of social isolation. For this, protective measures must be taken before, during and after interaction with the baby.

Discussion

The prenatal period is usually accompanied by maternal mental anguish associated with the pregnancy itself. Pregnant women are often concerned about fetal health and the outcome of childbirth. In addition to anxiety resulting from the pregnancy itself, there are several other risk factors associated with the high prevalence of anxiety during pregnancy[12]. In this sense, a factor that can affect the

mental health of pregnant women is insecurity related to catastrophic, pandemic or natural disasters[13,14]. Restrictions in terms of social distance (preventing communication with relatives, friends and other people) increase stress, anxiety and depression in the population's routine life[15].

Pregnant women also face challenges due to the responsibility of caring for other children/family members[16]. On the other hand, the need to receive regular care from maternity services increases the risk of exposure to virus infection in this population group[14]. Impacts of SARS-COV-2 can positively or negatively change the gestational and puerperal cycles of women. Chart 1 covers studies involving the impacts of COVID-19 on the pregnancy-puerperal cycle, highlighting the main risks to which pregnant women are exposed during the pandemic period.

In this period of "new normal", several factors impacted in a way in the lives of pregnant and postpartum women and, through the analysis of the articles, 5 categories were proposed. The main impacts of COVID-19 on the pregnancy-puerperal cycle are associated with: (1) psychological aspects, (2) vertical transmission and cross-contamination, (3) complications during labor, (4) quality of care and insertion of the teleservice resource in the pandemic period and (5) aspects of the mother-baby bond. Next, the results are discussed based on these 5 categories.

Psychological aspects

Impacts caused by social isolation, loneliness and concerns about the risk of infection and/or its economic consequences can affect the mental health of the population, generating major psychological impacts in the short, medium and long term. The current scenario of the COVID-19 pandemic leads to psychological suffering in certain groups, which may include women in the pregnancy-puerperal period[17]. This is because pregnancy itself is characterized as a state of vulnerability for women, making them more susceptible to mental health morbidities. In the pregnancy-puerperal cycle, rates of anxiety and depressive symptoms are higher than in non-pregnant women of childbearing age[18].

Uncertainty about the future can be a cause of stress, fear and anxiety. The experience of a continuous pandemic and its possible impacts generates insecurity of not knowing how to protect themselves and the NB after birth from the risk of contracting the infection from the SARS-CoV-2 virus[17]. A study with 288 women in the form of a questionnaire obtained as main observations depressive symptoms (39.2%) and high prevalence of anxiety (34.4%) among women with higher education, with only 3.1% citing pre-existing mental symptoms. Such observations are worrying, bearing in mind the prevalence rates of depression and anxiety among the population of pregnant women before the pandemic[18].

Vertical transmission and cross contamination

When approaching this topic, it is important to consider that signs and symptoms of non-pregnant women who test positive for COVID-19 are analogous to those of pregnant women with COVID-19[19]. However, it should be considered that the gestational framework already imposes a certain vulnerability on the woman's body, along with some type of comorbidity in some cases (for example: hypertension, diabetes, obesity and respiratory diseases)[20]. When comparing with other flu syndromes from the coronavirus family, it is therefore clear that pregnant women belong to the risk group and all precautions must be taken in health care and prenatal care[21].

When evaluating umbilical cord blood, amniotic fluid, newborn throat swab and breast milk samples in 9 patients, all samples were negative for SARS-CoV-2, even though the pregnant women developed COVID-19 during the gestational period[22].

There was also a risk of cross-contamination between health professionals and pregnant women and even in hospitalization wards between puerperal women and patients sharing the same room. For this reason, the layout of operating rooms was reorganized, as was the separation of sections, in addition to reinforcing the importance of following the obstetric plan in order to avoid interventions such as forceps and induced labor that can result in longer hospital stays and, consequently, greater risk of contamination[14,23].

In the hospital environment, the risk of cross-contamination is greater in a pandemic period. For the safety of pregnant women, recommendations for obstetric management should be standardized, such as correct use of PPE, social distancing and disinfection of benches and hospital rooms using high-performance products and quaternary ammonia base. Such care must be followed in order to maintain the safety of the pregnant woman, the neonate and the health team[24].

Complications in childbirth

In pregnant women with COVID-19, studies describe that there is a risk of premature birth, premature rupture of membranes, fetal distress and tachycardia, when the infection occurs in the 3rd trimester of pregnancy[19]. According to a study carried out in Stockholm (Sweden) with 67 women who tested positive for COVID-19, there were few cases of women affected by the severe form of the disease and most of them had vaginal delivery at term, with the NB testing negative for SARS-CoV-2[21].

Women with respiratory diseases should receive top priority when being treated as they are at risk of complications throughout the pregnancy, childbirth and postpartum period[25]. Deliveries of women infected with SARS-CoV-2 should be performed in tertiary care maternity wards, in order to promote and predict the safety of the binomial in case complications arise[20]. SARS-CoV-2 can limit uterine growth, which can result in miscarriage, prematurity, need for ventilatory support for the mother and/or newborn, or even admission to the Intensive Care Unit (ICU)[26].

Restructuring of perinatal care services

The COVID-19 pandemic has significantly limited face-to-face medical care, the consequence of which has been the increase in the use of technologies for support and

non-urgent care, with the Internet being a device to meet this need. Pregnant women are naturally motivated to search for information online, such as support groups on social networks, to clarify doubts with other pregnant women, as well as to support themselves emotionally[13].

Via remote monitoring by the Maternal and Fetal Medicine Unit (MMF) of the Obstetrics Department of the Pontificia Universidad Católica de Chile, a study was carried out with 39 pregnant or postpartum patients in the immediate postpartum period with positive RT-PCR for SARS-CoV-2. Monitoring took the form of a questionnaire through telephone consultation, tele consultation and text messages, in a period of 24 to 72 hours according to symptoms until the moment of medical discharge. It was concluded that the online monitoring method implemented during the pandemic had positive acceptance; however, more research should be carried out to assess its acceptance, safety and applicability[15].

The same study also highlighted the importance of alternating care by a mixed model of high and low risk prenatal care with planning, continuous assessment of health professionals and patients in order to maintain telemedicine in force after the pandemic[15].

Mother-child bond

Breastfeeding is one of the main ways to establish the mother-NB bond through affection and care soon after birth[26]. In addition, the environment also favors this bond, but in the current social context, anxiety and fear on the part of the mother significantly interfere with this formation, impacting the health of both[26].

Social distancing is a way to mitigate viral spread. It was then necessary to establish hospital guidelines in order to facilitate the bond of a mother with suspected or confirmed COVID-19 with a full-term NB in rooming-in[26]. When the possibility of the coronavirus being transmitted via breast milk was ruled out, there was a prioritization that mother and newborn should not be separated, as this can interfere with the mother-child bond[25,26].

Conclusion

Results of the present research guide health professionals on the impacts of the COVID-19 pandemic on pregnant and postpartum women.

Relevant information was gathered to understand, prevent and treat in advance issues related to the mental health of pregnant and postpartum women, to improve the quality of care and to facilitate the means of access for prenatal and postpartum follow-up, the priority of care for women with some respiratory syndrome (as a way to avoid possible complications during childbirth) and prioritizing the mother-child bond.

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