

CUIDADO É FUNDAMENTAL

Escola de Enfermagem Alfredo Pinto – UNIRIO

SYSTEMATIC REVIEW OF THE LITERATURE

DOI: 10.9789/2175-5361.rpcfo.v15.11779

SOCIODEMOGRAPHIC FACTORS AND TYPE OF DELIVERY: SYSTEMATIC REVIEW

*Fatores sociodemográficos e via de parto: revisão sistemática**Factores sociodemográficos y tipo de parto: revisión sistemática***Fernanda Garcia Gabira**¹ **Gabriela Oliveira**¹ **Keila Cristina Mascarello**¹ **Elizabete Regina Araújo Oliveira**¹ 

ABSTRACT

Objective: to identify the sociodemographic factors associated with the mode of delivery. **Method:** this is a systematic review with a search in the Latin American and Caribbean Literature on Health Sciences, PubMed and Cochrane databases in May 2021. The study protocol was registered with PROSPERO under number CRD42021257340. The selected articles were analyzed by the Joanna Briggs Institute and the Grading System of Recommendations Assessment, Development and Evaluation systems. **Results:** women with a higher socioeconomic level, higher education, aged over 35 years and private institutions have a greater chance of having a cesarean section compared to the vaginal level. The quality of quality of quality for the service provider variable was low and the quality of maternal schooling is low and the quality of economic class is high. **Conclusion:** Sociodemographic conclusions in the literature.

DESCRIPTORS: Socioeconomic factors; Social determinants of health; Normal birth; Caesarean section; Delivery, Obstetric.

¹ Universidade Federal do Espírito Santo (UFES), Vitória, Espírito Santo, Brazil

Received: 03/18/2022; Accepted: 08/25/2022; Published online: 02/06/2023

Corresponding Author: Fernanda Garcia Gabira, E-mail: fernandagabirag@gmail.com

How cited: Gabira FG, Oliveira G, Mascarello KC, Oliveira ERA. Sociodemographic factors and type of delivery: systematic review. *R Pesq Cuid Fundam* [Internet]. 2023 [cited year month day];15:e11779. Available from: <https://doi.org/10.9789/2175-5361.rpcfo.v15.11779>



RESUMO

Objetivo: identificar os fatores sociodemográficos associados à via de parto. **Método:** trata-se de revisão sistemática com busca nas bases de dados Literatura Latino-Americana e do Caribe em Ciências da Saúde, PubMed e Cochrane em maio de 2021. O protocolo do estudo foi registrado na PROSPERO sob o n° CRD42021257340. Os artigos selecionados foram posteriormente analisados pelos sistemas Joanna Briggs Institute e Sistema Grading of Recommendations Assessment, Development and Evaluation.

Resultados: mulheres com maior nível socioeconômico, maior nível de escolaridade, com idade acima de 35 anos e parto em instituições privadas possuem maior chance de realizar cesariana comparado ao parto vaginal. A qualidade da evidência para variável de prestador hospitalar foi baixa, para idade e escolaridade materna a qualidade é moderada e classe econômica a qualidade é alta.

Conclusões: os fatores sociodemográficos contribuem para o aumento da taxa de cesárea e reforçam o cenário encontrado na literatura.

DESCRITORES: Fatores socioeconômicos; Determinantes sociais da saúde; Parto normal; Cesárea; Parto obstétrico.

RESUMEN

Objetivo: identificar los factores sociodemográficos asociados a la modalidad de parto. **Método:** se trata de una revisión sistemática con búsqueda en las bases de datos Literatura Latinoamericana y del Caribe en Ciencias de la Salud, PubMed y Cochrane en mayo de 2021. El protocolo de estudio fue registrado en PROSPERO con el número CRD42021257340. Los artículos seleccionados fueron analizados por el Instituto Joanna Briggs y los sistemas Grading System of Recommendations Assessment, Development and Evaluation.

Resultados: las mujeres con mayor nivel socioeconómico, educación superior, mayores de 35 años e instituciones privadas tienen mayor probabilidad de tener una cesárea en comparación con el nivel vaginal. La calidad de calidad de calidad para la variable proveedor de servicios fue baja y la calidad de escolaridad materna es baja y la calidad de clase económica es alta.

Conclusión: Conclusiones sociodemográficas en la literatura.

DESCRIPTORES: Factores socioeconómicos; Determinantes sociales de la salud; Parto normal; Cesárea; Parto obstétrico.

INTRODUCTION

Since 1985 it has been recommended that cesarean sections should not exceed 15% of births in any region of the world.¹⁻³ However, childbirth care has undergone profound changes over the years, where the superposition of different factors such as traditional medical indications, pre-existing clinical complications and those of the gestational period, population characteristics, and also socio-demographic and cultural conditions are determining the route of delivery⁴, which has been increasing cesarean rates.

A study⁵ conducted in 2015 shows that countries with women at higher socioeconomic levels increase by 2.4 times the rates of cesarean sections compared to those with lower financial conditions, by 1.6 times in private than public facilities, as well as for maternal education, where women with higher levels of education have a higher frequency of cesarean sections compared to those with lower education.

In view of the growing disparity between birth routes, Boerma et al.⁵ specifies that when women arrive in the health system, there are no obstetric reasons to expect a higher or lower frequency between the choice of birth route according to their socio-demographic conditions. Thus, in view of these indicators and considering what the literature has been pointing out, this study aimed to identify the sociodemographic factors associated with the route of delivery.

METHODS

This is a systematic review to identify studies that evaluated the sociodemographic factors associated with birth routes. The study protocol was registered in the International Prospective Register of Systematic Reviews (PROSPERO)⁶ under number CRD42021257340. According to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement.⁷

Searches were performed in the Latin American and Caribbean Literature on Health Sciences (LILACS), Biomedical Literature from Medical Literature Analysis and Retrieval System Online (PubMed), and Cochrane databases. The reference lists of relevant studies were examined to identify eligible studies. The searches took place in May 2021.

The search strategy for identifying the studies included the use of Medical Subject Heading (MeSH) and Health Sciences Descriptors (DeCS). The descriptors used were: "Pregnant Women"; "Pregnant Woman"; "Woman, Pregnant"; "Socioeconomic Factors"; "Factors, Socioeconomic"; "Standard of Living"; "Inequalities*"; "Risk Factors"; "Factor, Risk"; "Population at Risk"; "Social Determinants of Health"; "Health Social Determinant"; "Natural Childbirth"; "Childbirth, Natural"; "Water Birth"; "Waterbirth"; "Cesarean Section"; "Cesarean Sections"; "Delivery, Abdominal"; "Abdominal Delivery"; "C-Section (OB)"; "Parturition"; Birth*; Childbirth*. Boolean operators ("AND" and "OR") were incorporated into the search strategy as needed.

All studies were evaluated following the criteria defined in the PICO strategy⁸ where, Population is composed of puerperae,

Exposure by sociodemographic factors and outcome by route of normal or cesarean delivery.

Articles that answered the guiding question "Are sociodemographic factors such as income, education, race-color, maternal age and type of hospital provider associated with the route of normal delivery and cesarean section?" were included. Articles in English, Spanish or Portuguese, published in the last six years, clinical trials, cohorts, case-controls and cross-sectional. Excluded were articles that did not measure the outcomes of this study, theses, dissertations, book chapters, systematic or literature review articles. All identified references were imported into Endnote X9.

It was understood that the search period of the last 6 years might be the most appropriate because the frequency, trends, determinants, and inequalities in cesarean rates worldwide and regionally were described up to 2015.⁵

The selection process occurred in stages and was done by two reviewers independently, being: (1) title screening; (2) abstract screening; (3) full-text screening. All disagreements regarding inclusion or exclusion of studies were analyzed by a third reviewer.

Studies that lacked previously calculated sample size, 95% confidence interval reporting, and adjustment for potential confounding factors were excluded from the present review.

All included studies were assessed for risk of bias using the Joanna Briggs Institute (JBI) tool.⁹ Each component of the checklist was rated as Yes (Y), No (N), Unclear (U), Not Applicable (NA) [i.e., yes (Y), no (N), uncertain (I), and not applicable (NA)]. The risk of bias is calculated based on the number of "Yes" selected, it should be noted that the answer "Not Applicable" is not used in the calculation. Up to 49% is considered a high risk of bias, from 50% to 70% the risk is moderate, and above 70% there is a low risk.⁸

The studies were analyzed for quality of evidence using the Grading of Recommendations Assessment, Development and Evaluation (GRADE)¹⁰ system, which is a universal, sensitive, and transparent system for grading the quality of evidence and strength of recommendations.

The quality of evidence of each article can be classified as: high, moderate, low, or very low, the initial classification being determined by the study design. There are five factors that can decrease the quality of evidence (risk of bias, inconsistency, indirect evidence, imprecision, and publication bias) and three factors that can increase it (large effect magnitude, dose-response gradient, and residual confounding factors), but the increase in the level of evidence does not occur if it has been previously reduced.¹⁰

RESULTS

The search strategy retrieved 11,554 articles. The references of the selected articles were reviewed to locate articles not captured by the database search; no articles were included for selection in this search process. After removing duplicates, reading title and abstracts, 155 studies were screened and 25 analyzed in full. Thus, in the end, 14 articles were included for analysis. The complete flowchart of the selection is shown in Figure 1.

Table 1 shows the methodological characteristics and the main results of the included articles, organized in chronological order according to the date of publication. Thirteen studies assessed maternal age, of these, eleven^{11-14,17-19,21-24} found an association of maternal age (≥ 35 years) with the performance of cesarean section and two^{15,16} found no such association.

Twelve studies evaluated the level of maternal education and its association with types of delivery, among these, four

Figure 1 – PRISMA 2020 Declaration.

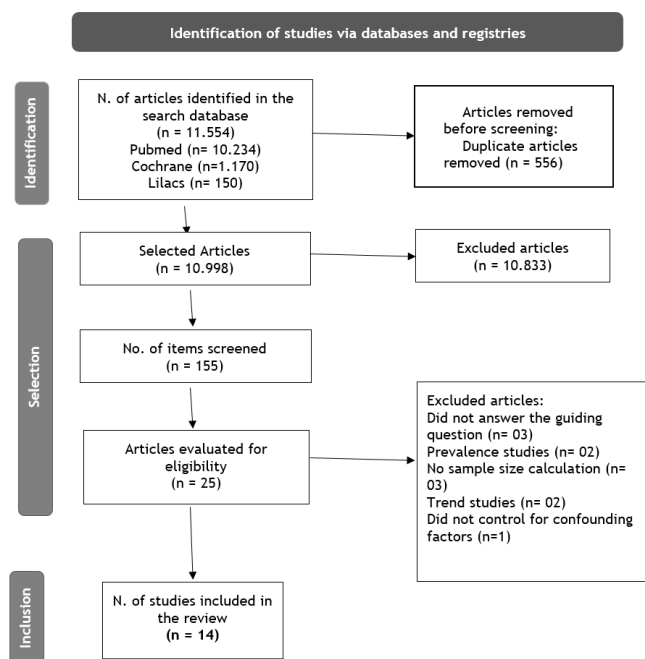


Table 1 – Description of the studies, main results and evaluation of the JBI.

Author, year of publication and country	Study design, sample size	Results	JBI
Martinelli et al., ¹⁴ (2021) Brazil	Cross-sectional study 12.562	Maternal age ≥ 35 years in both the private and public sectors have a higher chance of cesarean section (AOR 1.44 95%CI 1.13-1.83; AOR 1.63 95%CI 1.38-1.94), higher education lost association in the final adjusted model in the private sector and remained associated in the public sector (AOR 1.38 95%CI 1.13-1.68). Race-color had no association with the type of delivery performed.	100%
Antunes M. B. ¹² (2020). Brazil	Retrospective cross-sectional 3.448	Age ≥ 35 years (OR 1.4; 95% CI 1.1-1.7) has a higher chance of performing cesarean section compared to normal delivery. Postpartum women with education >8 years have a lower chance of having a cesarean section (OR 0.8 95%CI 0.7-0.9).	70%
Rossetto et al., ¹⁵ (2020) Brazil	Cross-sectional study 343	Elective cesarean was associated with private hospital (OR 39.9 95%CI 15.8-101.1) and white race-color (OR 2.94 95%CI 1.08-8.03). Age was not associated with the type of delivery performed.	100%
Adewuyi et al., ²¹ (2019) Nigeria	Cross-sectional study 31.171	Ages ≥ 35 years (AOR 2.12 95%CI 1.08-4.11) are more likely to perform cesarean sections compared to those aged <20 years (AOR 2.12 95%CI 1.08-4.11). There was no association for puerperal education, private service and socioeconomic status in the adjusted analyses.	100%
Dankwah et al., ²² (2019) Ghana	Cross-sectional study 4.294	Women 25 to 34 years old (AOR 3.15 95%CI 2.11-4.71) and women 35 to 49 years old (AOR 7.53 95%CI 5.11-11.08), higher education level (AOR 2.17 95%CI 1.26-3.74 compared to those without education level and higher socioeconomic level (AOR 4.38 95%CI 2.83-6.77) compared to those with lower level have a higher chance of cesarean section.	90%
Hasan A. ¹⁹ (2019) Bangladesh	Cross-sectional study 4.422	Higher socioeconomic status have a higher chance of having a cesarean section (AOR 1.94 95%CI 1.58-2.38), as do ≥ 20 years of age (AOR 1.54 95%CI 1.20-1.97), higher socioeconomic status (AOR 2.26 95%CI 1.83-2.79), and higher educational status (AOR 1.94 95%CI 1.58-2.38).	70%
De Loenzien et al., ¹⁸ (2019) Vietnam	Cross-sectional study 1.350	Private health sector, education level, and wealth quintile had no association with cesarean sections in the adjusted model. Age ≥ 35 years had a higher chance of performing cesarean sections compared to those aged 20-34 years (AOR 2.18 95% CI 1.44-3.31).	80%
Zaiden et al., ¹³ (2019) Brazil	Cross-sectional study 10.155	Hospital with mixed funding had a higher chance of performing cesarean section compared to public (AOR 1.81 95%CI 1.37-2.39), age ≥ 35 years had no association with type of delivery and neither educational level, lower chance of performing cesarean section for women with <8 years of education (AOR 0.65 95%CI 0.55-0.76).	100%
Manyeh et al., ²³ (2018) Ghana	Cross-sectional study 4.948	Age ≥ 35 years (AOR 3.73 95%CI 1.45-5.17), primary education level (AOR 1.65-2.51), high school (AOR 1.79 95%CI 1.19-2.70) and >8 years of education (AOR 3.53 95%CI 2.17-5.73), higher socioeconomic level (AOR 2.14 95%CI 1.43-3.20) higher chance of cesarean section.	90%
Abbas et al., ¹⁶ (2017) Pakistan	Cross-sectional study 10.602	Private hospital led to 34% (AOR 1.34 95%CI 1.14-1.58) more chance of performing cesarean section compared to public, as did higher socioeconomic level with 65% chance (AOR 1.65 95%CI 1.17-2.31) compared to poorer level. There was no association for age ≥ 35 years (AOR 0.98 95%CI 0.61-1.57).	100%
Alonso et al., ¹¹ (2017) Brazil	Cross-sectional study 9.828	In the public health sector, cesarean sections are more likely to occur in women who are older (AOR 1.44 95%CI 1.16-1.77), more educated (AOR 1.63 95%CI 1.15-2.31), and more affluent (AOR 1.52 95%CI 1.25-1.85).	100%
Begum et al., ¹⁷ (2017) India	Retrospective cross-sectional 2.549	Higher chance of performing cesarean section in those with higher socioeconomic (AOR 2.47 95%CI 1.78-3.34), higher education (AOR 2.06 95%CI 1.24-3.25), age ≥ 35 years (AOR 2.00 95%CI 1.18-3.40).	100%
Khan et al., ²⁴ (2017) Bangladesh	Cross-sectional study 4.726	Age ≥ 35 years increased the chance of cesarean section (AOR 1.98 95%CI 1.20-3.24). Lower economic status reduced the chance of cesarean (AOR 0.46 95%CI 0.32-0.65) than middle-income women, whereas for higher socioeconomic status increased chance of cesarean (AOR 2.33 95%CI 1.78-3.05). Chance higher in women with higher education (AOR 3.86 95%CI 2.51-5.93) and high school education (AOR 1.96 95%CI 2.51-5.93).	90%
Omani-Samani et al., ²⁰ (2017) Iran	Cross-sectional study 4.308	Private hospital had a higher chance of cesarean section (AOR 4.11 95%CI 3.30-5.11) compared to public hospital, women with higher socioeconomic status had a higher chance of cesarean section (AOR 1.22 95%CI 1.16-1.28) compared to lower socioeconomic status. Schooling was not associated.	70%

studies^{14,18,20,21} found no association between this exposure and outcomes, eight studies^{11,13,17,19,21-23} found a higher chance of cesarean section among those with higher education level and one¹² found a lower chance of cesarean section in women with more than eight years of schooling.

The association between socioeconomic status and the route of delivery was evaluated in nine studies, with two studies showing

no association.^{18,21} Seven studies found a higher chance of cesarean section when the woman has a high socioeconomic status.^{11,17,19,20,22-24}

Six studies analyzed whether the type of hospital provider influences the route of delivery, five^{13,13,15,16,20,21} found that private hospitals increase the chance of cesarean delivery, one study¹⁸ did not find this association.

Among all the studies included in this review, only four studies found an association between race/color and type of delivery in the crude analysis^{11,14,15,22}, but in the adjusted analysis only one study found a higher cesarean rate for Caucasians.¹⁵

According to the JBI tool, the studies have low to moderate risk of bias as shown in Table 1.

According to GRADE this survey provides a good indication of the likely effect of high economic class, maternal age above 35 years and high education on the cesarean delivery route. For hospital providers, the survey indicates a probable effect, but with high probability that it is different (Table 2).

DISCUSSION

The evidence included in this review shows that in the last six years, sociodemographic factors continue to influence the type of delivery performed.

It is observed that there is still cesarean use associated with women with higher socioeconomic status, higher educational levels, private health system and also for those aged 35 years or older. This scenario reinforces the disparity of obstetric care, the underutilization of cesarean sections and their unjustified overuse from the clinical point of view.^{22,25}

Studies^{17,19,21,24} point to the view that private health care provision can increase cesarean rates due to the possibility of financing by pregnant women and those with financial constraints contribute to low cesarean rates. Other factors pointed out by the non-association of cesarean sections in private deliveries are lack of access, availability of health services, inadequate facilities and insufficient labor force.^{18,21}

High maternal education can also contribute to cesarean rates through social status,¹⁶ and high education allows access to better obstetric care (private care)²² and decision making.^{26,28}

Particularly in Brazil, since 1980, public policies have been implemented to reverse the interventionist obstetric care model²⁶, among them, the Programa de Humanização no Pré-natal e Nascimento (2000)²⁷, Política Nacional de Atenção Integral à Saúde da Mulher (2004)²⁸, Rede Cegonha (2011)²⁹, Resoluções Normativas nº 368/1530 e 398/1631, Diretriz de Atenção Integral à Gestante: The Cesarean Operation (2015)³², Suitable Childbirth Project (2016)³³, National Guidelines for Normal Childbirth Care (2017)³⁴, and the Enhancement and Innovation in Care and Teaching in Obstetrics and Neonatology Project (2017).³⁵

Still, rates remain high and evidence a priority health problem in Brazil. A study¹¹ reports a cultural aspect in Brazilian private maternity hospitals that contributes to the low performance of normal birth, since birth care is basically performed by obstetricians,³⁶ convenience of surgical scheduling¹¹ and the greater purchasing power in the ease of payment for this service.³⁷

Another factor associated with cesarean section in this review was maternal age.^{11-14,17-19,21-24} A cohort³⁸ shows that age alone is not a risk factor. In this age group, adequate prenatal and delivery follow-up make maternal and perinatal prognoses similar

to those of younger women³⁹. However, maternal age above 35 years generates a higher risk of hypertension, eclampsia, gestational diabetes⁴⁰ and a greater chance of malproportion and dystocia.^{14,17,41}

Recommendations for interventions are discussed by the WHO to reduce unnecessary cesarean deliveries^{42,43} with interventions targeting women, health professionals, organizations and health systems.⁴³ One study⁴ suggests the insertion of multiprofessional teams in direct childbirth care, such as nurse midwives and doulas, aiming at reducing medical interventions.

In addition, higher quality research is needed to explore factors linked to the birth route, such as qualitative research to understand the reasons for cesarean sections in women with higher socioeconomic status, with higher education and in the private system; and also follow-up research during the gestational period until delivery.

This review has its own limitations; we did not define gestational risk classifications that may influence the chance of cesarean section and the studies are cross-sectional.

CONCLUSION

The findings of this review point to a problem that is neither new nor unknown and reinforce the scenario already found in the literature of the contribution of sociodemographic factors in increasing cesarean rates.

There is a need to promote access to health care in an equitable way, so that women with lower conditions have access to quality obstetric services according to their needs. It is also suggested the use of tools that encourage women's autonomy over their labor, leading to greater acceptance of vaginal delivery by women with higher socioeconomic levels, assisted in private hospitals.

Considering also actions in health systems to reduce cesarean rates, either by the insertion of a multidisciplinary team, encouragement of vaginal delivery, and concise explanation of the complications and benefits of both routes.

CONFLICT OF INTEREST

There isn't.

FINANCING

There isn't.

REFERENCES

1. Rydahl E, Declercq E, Juhl M, Maimburg RD. Cesarean section on a rise: Does advanced maternal age explain the increase? A population register-based study. *PLoS ONE*. [Internet]. 2019 [cited 2021 jun 12];14(1). Available from: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0210655>.

Table 2 – Quality of evidence evaluation according to the GRADE System.

QUALITY ASSESSMENT									Quality of evidence
N°	Delineation	Risk of Bias	Inconsistency	Indirect Evidence	Imprecision	Magnitude of effect	Residual Estimation	Dose-response	
Maternal Age									
13	Observacional	No severe limitations	No Severe	No Severe	Severe ¹	No magnitude ²	Present ⊕	Present ⊕	⊕⊕⊕○ Moderate
Maternal education									
12	Observacional	No severe limitations	No Severe	No Severe	No Severe	No magnitude ³	Present ⁴ ⊕	Present ⊕	⊕⊕⊕○ Moderate
Economy Class									
09	Observacional	No severe limitations	No Severe	No Severe	No Severe	Large ⊕	Present ⁵ ⊕	Present ⊕	⊕⊕⊕⊕ High
Type of hospital provider									
06	Observacional	No severe limitations	No Severe	No Severe	Severe ⁶	Large ⊕	Absent ⁷	Absent ⁸	⊕⊕○○ Low
<p>¹ One study²² shows large amplitude in the 95% CI where AOR 7.53 (5.11-11.08).</p> <p>² Five studies^{17,18,21-23} show large magnitude of effect with precision of the CI around the effect.</p> <p>³ Four studies^{17,22-24} show large magnitude of effect.</p> <p>⁴ Six studies^{11,13,17,22-24} overestimate the effect of exposure.</p> <p>⁵ Seven studies^{11,17,19,20,22-24} overestimate the effect of exposure.</p> <p>⁶ One study¹⁵ shows 95% CI range where AOR 39.9 #study had no significant p-value, not interfering with the direction of the results – not downgraded.</p> <p>⁷ Half of the studies overestimate the effect^{16,20} and half underestimate it.^{13,15}</p> <p>⁸ Absence of dose-response.</p>									

2. Cegolon L, Mastrangelo G, Maso G, et al. Understanding Factors Leading to Primary Cesarean Section and Vaginal Birth After Cesarean Delivery in the Friuli-Venezia Giulia Region (North-Eastern Italy 2005–2015). *Sci Rep*. [Internet]. 2020 [cited 2021 jun 12];10(1):380. Available from: <https://pubmed.ncbi.nlm.nih.gov/31941963/>.
3. World Health Organization (WHO). Global Strategy for Women's, Children's and Adolescents' Health (2016–2030) : report by the Director-General – Assembly 72. [Internet]. 2019. [cited 2021 Sep 11]; Available from: <https://apps.who.int/iris/handle/10665/328739>
4. Rasador S, Abegg C. Factors associated with the route of birth delivery in a city in the Northeast region in the State of Rio Grande do Sul, Brazil. *Rev Bras Saúde Materno Infant*. [Internet]. 2019 [cited 2021 jun 13];19(4). Available from: <https://www.scielo.br/j/rbsmi/a/JNd5KqYbZRtPW6y6T3C8nhs/?lang=en>
5. Boerma T, Ronsmans C, Melesse DY, Barros AJD, Barros FC, Juan L, et al. Global epidemiology of use of and disparities in caesarean sections. *The Lancet*. 2018 [cited 2021 jun 15];392(10155). Available from: <https://pubmed.ncbi.nlm.nih.gov/30322584/>.
6. National Institute for Health Research (NIHR). PROSPERO International prospective register of systematic reviews. [Internet]. 2020 [cited 2021 apr 29]:1–12. Available from: <https://www.crd.york.ac.uk/prospero/>
7. Page MJ, McKenzie JE, Bossuyt PM, Hoffmann T, Mulrow CD, Tetzlaff JM, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ*. [Internet]. 2021 [cited 2021 ago 27];372:n71. Available from: <https://www.bmj.com/content/372/bmj.n71>.
8. Munn Z, Stern C, Aromataris E, Lockwood C, Jordan Z. What kind of systematic review should I conduct? A proposed typology and guidance for systematic reviewers in the medical and health sciences. *BMC Med Res Methodol*. [Internet]. 2018 [cited 2021 jul 20];18:5. Available from: <https://bmcmmedresmethodol.biomedcentral.com/articles/10.1186/s12874-017-0468-4>
9. Munn Z, Moola S, Riitano D, Lisy K. The development of a critical appraisal tool for use in systematic reviews addressing questions of prevalence. *Int. J. Health Policy Manag*. [Internet]. 2014 [cited 2021 jul 20];3(3):123–128. Available from: <https://bmcmmedresmethodol.biomedcentral.com/articles/10.1186/s12874-017-0468-4>
10. Guyatt GH, Oxman AD, Vist GE, Kunz R, Falck-Ytter Y, et al. GRADE: an emerging consensus on rating quality of evidence and strength of recommendations. *BMJ*. [Internet]. 2008 [cited 2021 jun 13];336(7650). Available from: <https://pubmed.ncbi.nlm.nih.gov/18436948/>
11. Alonso BD, Silva FMB da, Latorre M do RD de O, Diniz CSG, Bick D. Cesarean birth rates in public and privately funded hospitals: a cross-sectional study. *Rev. Saúde Pública*. [Internet]. 2017 [cited 2021 jun 14];51. Available from: <https://www.revistas.usp.br/rsp/article/view/140990>
12. Antunes MB, Rossi RM, Pelloso SM. Relationship between gestational risk and type of delivery in high risk pregnancy. *Rev Esc. Enferm. USP* [Internet]. 2020 [cited 2021 jun 15];54 Available from: <https://www.scielo.br/j/reeusp/a/kqvyvpxg7XkznD4HgnTmLft/?lang=en>.
13. Zaiden L, Nakamura-Pereira M, Gomes MAM, Esteves-Pereira AP, Leal M do C. Influence of hospital characteristics on the performance of elective cesareans in Southeast Brazil. *Cad. Saúde Pública*. [Internet]. 2019 [cited 2021 jun 16];36. Available from: <http://cadernos.ensp.fiocruz.br/static/arquivo/1678-4464-csp-36-01-e00218218-en.pdf>.
14. Martinelli KG, Gama SGN da, Almeida AH do V de, Nakamura-Pereira M, Santos Neto ET dos. Prelabor cesarean section: the role of advanced maternal age and associated factors. *Rev Saúde Pública*. [Internet]. 2021 [cited 2021 jun 15];55. Available from: <https://www.scielo.br/j/rsp/a/46hV8qQ9XxsqWD5wxWdgZrF/>.
15. Rossetto M, Schmalfuss JM, Bedin K, Pinheiro AM, Batista J d'Arc L. Fatores associados à cesariana eletiva em mulheres atendidas em um hospital referência do oeste catarinense. *Rev Enferm. UFSM*. [Internet]. 2020 [acesso em 20 de junho 2021];10(0):54. Available from: <https://periodicos.ufsm.br/reufsm/article/view/39398/html>.
16. Abbas F, Ud Din RA, Sadiq M. Prevalence and determinants of Caesarean delivery in Punjab, Pakistan. *East Mediterr Health J*. [Internet]. 2019 [cited 2021 jun 21];24(11):1058–1065. Available from: <https://pubmed.ncbi.nlm.nih.gov/30701520/>.
17. Begum T, Rahman A, Nababan H, et al. Indications and determinants of caesarean section delivery: Evidence from a population-based study in Matlab, Bangladesh. *PLoS ONE*. [Internet]. 2017 [cited 2021 jun 17];12(11). Available from: <https://pubmed.ncbi.nlm.nih.gov/29155840/>
18. Loenzien M de, Schantz C, Luu BN, Dumont A. Magnitude and correlates of caesarean section in urban and rural areas: A multivariate study in Vietnam. *PloS One*. 2019 [cited 2021 jun 17];14(7). Available from: <https://pubmed.ncbi.nlm.nih.gov/31348791/>.
19. Hasan F, Alam MdM, Hossain MdG. Associated factors and their individual contributions to caesarean delivery among married women in Bangladesh: analysis of Bangladesh demographic and health survey data. *BMC Pregnancy Childbirth*. [Internet] 2019 [cited 2021 jun 12];19(1). Available from: <https://bmcpregnancychildbirth.biomedcentral.com/track/pdf/10.1186/s12884-019-2588-9.pdf>
20. Omani-Samani R, Mohammadi M, Almasi-Hashiani A, Maroufizadeh S. Cesarean Section and Socioeconomic Status in Tehran, Iran. *J Res. Health Sci*. [Internet] 2017

- [cited 2021 jun 10];17(4):394. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7189948/>.
21. Adewuyi EO, Auta A, Khanal V, Tapshak SJ, Zhao Y. Cesarean delivery in Nigeria: prevalence and associated factors a population-based cross-sectional study. *BMJ Open*. 2019 [cited 2021 jun 10];9(6). Available from: <https://bmjopen.bmj.com/content/9/6/e027273>.
 22. Dankwah E, Kirychuk S, Zeng W, Feng C, Farag M. Socioeconomic inequalities in the use of caesarean section delivery in Ghana: a cross-sectional study using nationally representative data. *Int J Equity Health*. [Internet] 2019 [cited 2021 jun 10];18(1). Available from: <https://pubmed.ncbi.nlm.nih.gov/31653255/>.
 23. Manyeh AK, Amu A, Akpakli DE, Williams J, Gyapong M. Socioeconomic and demographic factors associated with caesarean section delivery in Southern Ghana: evidence from INDEPTH Network member site. *BMC Pregnancy Childbirth*. [Internet] 2018 [cited 2021 jun 10];18(1). Available from: <https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/s12884-018-2039-z>
 24. Khan MdN, Islam MM, Shariff AA, Alam MdM, Rahman MdM. Socio-demographic predictors and average annual rates of caesarean section in Bangladesh between 2004 and 2014. *PLoS ONE*. [Internet] 2017 [cited 2021 jun 12];12(5). Available from: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0177579>
 25. Betrán AP, Ye J, Moller A-B, Zhang J, Gülmezoglu AM, Torloni MR. The Increasing Trend in Caesarean Section Rates: Global, Regional and National Estimates: 1990-2014. *PLoS ONE*. [Internet] 2016 [cited 2021 jun 12];11(2). Available from: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0148343>
 26. Cintia de Freitas Oliveira, Bortoli, M.C, Setti, C., Luquine Júnior, C.D., Toma, T.S. Apoio contínuo na assistência ao parto para redução das cirurgias cesarianas: síntese de evidências para políticas. *Cien. Saude Colet*. [Internet]. 2021. [cited 2021 jun 14]. Available from: <https://www.cienciaesaudecoletiva.com.br/artigos/apoio-contiuo-na-assistencia-ao-parto-para-reducao-das-cirurgias-cesarianas-sintese-de-evidencias-para-politicas/17900?id=17900>
 27. Ministério da Saúde (BR). Programa de Humanização no Pré-natal e Nascimento. *Rev. Bras. Saúde Materno Infant*. [Internet]. 2002 [acesso em 02 de agosto 2021];2:69-71. Available from: <https://www.scielo.br/j/rbsmi/a/csvgvNHzkYX4xM4p4gJXrVt/?lang=pt>.
 28. Ministério da Saúde (BR). Secretaria de vigilância em Saúde. Política nacional de atenção integral à saúde da mulher: princípios e diretrizes. [Internet]. Brasília: Ministério da Saúde, 2011 [acesso em 29 de agosto 2021]. Disponível em: https://bvsms.saude.gov.br/bvs/publicacoes/politica_nac_atencao_mulher.pdf;
 29. Ministério da Saúde (Brasil). Portaria no 1.459 de 24 de junho de 2011. Institui, no âmbito do Sistema Único de Saúde – SUS – a Rede Cegonha. *Diário Oficial da União* 24 de nov 2011 ; Seção 1.
 30. Ministério da Saúde (Brasil). Resolução Normativa no 368 de 6 de janeiro de 2015 Direito ao acesso à informação das beneficiárias aos percentuais de cirurgias cesáreas e partos normais. *Diário Oficial da União* 6 jan 2015. Seção 1.
 31. Ministério da Saúde (Brasil). Resolução Normativa no 398 de 05 de fevereiro de 2016. Obrigatoriedade de credenciamento de enfermeiros obstétricos. *Diário Oficial da União* 5 fev 2016. Seção 1.
 32. Ministério da Saúde (BR). Diretrizes Nacionais de Atenção à Gestante: Operação Cesariana. Secretaria da Ciência, tecnologia e Inovações. 2016 [acesso em 12 de setembro 2021]; Disponível em: <https://portaldeboaspraticas.iff.fiocruz.br/biblioteca/diretrizes-nacionais-de-atencao-a-gestante-operacao-cesariana/>.
 33. Ministério da Saúde (BR). Agência Nacional de Saúde Suplementar. Parto Adequado [Internet]. Brasília: Ministério da Saúde, 2015 [acesso em 12 de setembro 2021]; Disponível em: <https://www.gov.br/ans/pt-br/assuntos/gestaosaude/parto-adequado>.
 34. Ministério da Saúde (BR). Diretrizes Nacionais de Assistência ao Parto Normal: Versão Resumida. [Internet]. Brasília: Ministério da Saúde, 2017 [acesso em 12 de setembro 2021]; Disponível em: <https://portaldeboaspraticas.iff.fiocruz.br/biblioteca/diretrizes-nacionais-de-assistencia-ao-parto-normal-versao-resumida/>.
 35. Ministério da Saúde (BR). ApiceOn – Aprimoramento e Inovação no Cuidado e Ensino em Obstetrícia e Neonatologia. [Internet]. Brasília: Ministério da Saúde, 2017 [acesso em 2021 sep 12]; Disponível em: <https://portaldeboaspraticas.iff.fiocruz.br/apice/o-projeto/>
 36. Barros AJD, Santos IS, Matijasevich A, Domingues MR, Silveira M, Barros FC, et al. Padrões dos partos em uma coorte de nascimentos: cesarianas quase universais para os ricos. *Rev. Saúde Pública*. [Internet]. 2011 [acesso em 19 junho 2021];45:635-643. Disponível em: <https://www.scielo.br/j/rsp/a/CqTwsNJsSyPKRkt6CV75GHR/abstract/?lang=en>.
 37. Oliveira RR de, Melo EC, Novaes ES, Ferracioli PLRV, Mathias TA de F. Fatores associados ao parto cesárea nos sistemas público e privado de atenção à saúde. *Rev. Esc. Enferm. USP*. [Internet]. 2016 [acesso em 19 junho 2021];50:733-740. Disponível em: <https://www.scielo.br/j/reusp/a/tTDrBK98SrhZLBtvqPKkj8R/?format=pdf&lang=pt>.
 38. Figuerêdo ED, Lamy Filho F, Lamy ZC, Silva AAM da. Maternal age and adverse perinatal outcomes in a birth cohort (BRISA) from a Northeastern Brazilian city. *Rev. Bras. Ginecol. E Obstetrícia*. [Internet]. 2014 [cited 2021

- ago 3];36:562–568. Available from: <https://www.scielo.br/j/rbgo/a/gtWzMHV6vqJVVmsSmvRg4Rf/?lang=en>.
39. Aldrighi JD, Wall ML, Souza SRRK, Cancela FZV. The experiences of pregnant women at an advanced maternal age: an integrative review. *Rev. Esc. Enferm. USP*. [Internet]. 2016 [cited 2021 ago 23];50(3). Available from: <https://pubmed.ncbi.nlm.nih.gov/27556724/>.
 40. Zgheib SM, Kacim M, Kostev K. Prevalence of and risk factors associated with cesarean section in Lebanon – A retrospective study based on a sample of 29,270 women. *Women Birth J Aust Coll Midwives*. [Internet]. 2017 [cited 2021 ago 09];30(6). Available from: <https://pubmed.ncbi.nlm.nih.gov/28549841/>.
 41. Bayrampour H, Heaman M. Advanced maternal age and the risk of cesarean birth: a systematic review. *Birth Berkeley Calif*. [Internet]. 2010 [cited 2021 sep 01];37(3). Available from: <https://pubmed.ncbi.nlm.nih.gov/20887538/>.
 42. Betrán AP, Temmerman M, Kingdon C, Mohiddin A, Opiyo N, Torloni NO, et al. Interventions to reduce unnecessary caesarean sections in healthy women and babies. *The Lancet*. [Internet]. 2018 [cited 2021 jun 03];392(10155). Available from: [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(18\)31927-5/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(18)31927-5/fulltext).
 43. World Health Organization (WHO). Recommendations Non-Clinical Interventions to Reduce Unnecessary Caesarean Sections. [Internet]. World Health Organization, 2018 [cited 2021 jun 12]; Available from: <https://www.ncbi.nlm.nih.gov/books/NBK532673/>