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# ACCESS TO PRENATAL CARE FOR PREGNANT WOMEN IN SITUATIONS OF SOCIAL VULNERABILITY: AN INTEGRATIVE REVIEW

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## ABSTRACT

Objective: to identify strategies to promote access to and adherence to prenatal care among pregnant women in situations of social vulnerability. Method: integrative literature review in nine databases. Studies that answer the research question, published in English, Spanish, and Portuguese, without delimitation of the date of publication, were included. To verify the methodological quality of the articles, the GRADE system was used. The information collected in the studies was organized and synthesized in a table containing eight categories. Results: from the search in the databases, 1096 publications on the subject were found, and of these, five were included, published in English, between 2015 and 2020. Several strategies to ensure access and adherence of pregnant women in social vulnerability to prenatal care were highlighted, in addition to the challenges to implement the proposed actions, forming two categories. Conclusion: the review identified multiple strategies adopted by health services and professionals to favor adherence to prenatal care, such as public policies, social support, home monitoring, telemedicine, use of health apps, group care, and flexibility in service hours. At the same time, multifactorial difficulties were evidenced that imply the application of these proposals to allow access to and adherence to prenatal care for pregnant women in vulnerability, which reinforces the need for further studies in this area. Protocol registered with PROSPERO (CRD42024620030).

**Keywords:** Pregnant women. Social vulnerability. Prenatal care. Health promotion. Nursing. Revision.

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## INTRODUCTION

This study aims at access to prenatal care by pregnant women in situations of social vulnerability. It is known that the concept of vulnerability is broad and can be recognized as broader social processes against which the individual, by himself, does not have the means to act and whose course only the State, through public policies, is able to change[1].

In this sense, considering the Health Science Descriptors (DeCS), vulnerability can be divided into four types, namely: sexual vulnerability; vulnerability and disasters; vulnerability in health; and social vulnerability, the latter with a scope note that addresses the characteristics of a person or community that affect their ability to anticipate, confront, repair and recover from the effects of a natural or man-made disaster[2]. Therefore, this review works with the concept used by the Health Science Descriptors to search the literature with greater precision, but recognizes as significant the other definitions given to the term "Social vulnerability".

The literature is consistent and considers that prenatal care is characterized by health care for pregnant women for the prevention and/or early detection of both maternal and fetal diseases, allowing a healthy development of the baby and reducing the risks of the pregnant woman. Its purpose is to monitor women from the beginning to the end of pregnancy, in order to provide humanized care to pregnant women, in addition to covering health promotion conducts and prevention of the main diseases present in this period[3]. Therefore, it is necessary that this prenatal care be performed holistically, observing the specificities of each woman and identifying the factors that may be placing her in a situation of vulnerability, and making it impossible to access and perform prenatal care[4].

In view of the scenario presented, it is essential to understand access to prenatal care as a fundamental human right, inscribed in the principle of human dignity and guaranteed by the Federal Constitution of 1988, as well as by international treaties to which Brazil is a signatory[5-6]. The right to health, as a social right, must be universal, integral and equitable, principles that gain even more relevance when dealing with historically marginalized groups[7]

Social vulnerability, in this context, cannot be understood only as an individual condition, but as an expression of structural processes that limit access to basic rights and perpetuate inequalities, processes that affect the ability of individuals and communities to react and recover in the face of social and economic adversities[5-6]. Thus, ensuring access to prenatal care with quality and equity is not only a technical or care issue, but an ethical

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and legal imperative, which reaffirms the State's commitment to human rights, especially those groups most weakened by social inequalities.

When the condition of the pregnant woman is present, social vulnerability makes her even more predisposed to impairments that can impair the good gestational development and interfere with the outcome of the pregnancy. According to the National Institute of Child Health and Human Development[8], women in disadvantaged communities, in situations of social vulnerability, face barriers to the early initiation and continuity of prenatal care, which can increase the risks of complications such as premature birth and infant mortality. This scenario is compounded by chronic stress, low income, and lack of infrastructure, directly affecting maternal and fetal health. In view of this, guaranteed access to prenatal care performed with quality and in a welcoming way reduces the possible risks that may appear during the pregnancy-puerperal cycle, contributing to the reduction of maternal-fetal problems[9].

Studies show significant numbers in prenatal coverage. However, there is a reduction in the percentage of pregnant women who had the minimum number of consultations recommended by the Ministry of Health, a fact that may be intrinsically related to access to prenatal care by women who are in some situation of social vulnerability[10]. There is an explicit gap in the literature that highlights the difficulty of access to prenatal care by pregnant women in vulnerable situations, as well as the strategies used to ensure these women's access to follow-up during the gestational cycle.

In the context of the Maternal and Child Care Line and the organization of the service for comprehensive care for women[11], and seeking to advance in the guarantee and protection of human rights, with a view to building a more inclusive Brazil, this study aims to identify strategies to promote access and adherence to prenatal care among pregnant women in situations of social vulnerability.

Considering the reality of Brazil, where the context of gender inequality is notorious, and even among women, when comparing the ethnic-racial context, the need for a more detailed look at this population is evidenced[12].

Thus, the realization of this study is justified, as it is a subject that makes inequalities within the context of maternal and child health visible, especially for pregnant women in situations of social vulnerability, allowing the identification of difficulties in accessing prenatal care. In addition, after a bibliographic search carried out in the main

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databases, it was observed that this is a topic that lacks information, further fostering the foundation of the research.

It is believed that this study will contribute to science by recognizing what barriers professionals are facing in attracting pregnant women in social vulnerability in prenatal care and what is being done to minimize this context. For the user, more specifically women in vulnerable situations, it contributes to promoting their visibility and providing information about the implications that this condition permeates the gestational period and what is being done to ensure that it does not affect access to prenatal care. Finally, it contributes socially to ensuring the right of all pregnant women to prenatal care, strengthening the public health system and promoting improvements in social conditions that impact this vulnerability.

## METHOD

An integrative review was chosen, a type of literature review that seeks to gather, analyze and synthesize research results on a specific topic, providing a broader and more integrated view of the subject. An integrative review is useful for professionals and researchers, as it generates a comprehensive overview of existing knowledge[13-14].

To guide this study, the stages were divided into: identification of the theme and selection of the research question for the elaboration of the integrative review, establishment of criteria for inclusion and exclusion of studies, definition of the information to be extracted from the selected studies, evaluation of the studies included in the integrative review, interpretation of the results and presentation of the research synthesis[15]. It is noteworthy that the research protocol was registered in the international database of systematic reviews PROSPERO (International prospective register of systematic reviews), produced by the CRD and funded by the National Institute for Health Research (NIHR) under CRD42024620030 registration.

From the identification of the theme, it was possible to formulate the research question, using the acronym PECO, with the objective of recognizing keywords that represent the clinical issue as a whole[16]. In this acronym we have the letter P as the population of interest, E as the exposure, C as the comparator/control and O as the outcome of interest. Thus, in this revision, the "P" (population) will be formed by pregnant women in situations of social vulnerability; "E" (primary intervention) will be the strategies

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for access to and adherence to prenatal care; "C" (control) pregnant women on social security in prenatal care; "The" (outcome) guarantee of access and adherence to prenatal care for all pregnant women.

Therefore, this review has as a research question: "What are the strategies adopted by health services and professionals to ensure access to and adherence to prenatal care for pregnant women in situations of social vulnerability, compared to those employed in non-vulnerable women?"

The articles were identified from a bibliographic search carried out in December 2024, in the following databases: Virtual Health Library (VHL), Scientific Electronic Library Online (Scielo), The Coordination for the Improvement of Higher Education Personnel (CAPES), Medical Literature Analysis and Retrieval System Online (MEDLINE/Pubmed), Embase, Cochrane, Latin American and Caribbean Literature on Health Sciences (LILACS), Scopus and Web of Science (WoS). These databases were chosen because they are widely recognized for indexing high-quality articles, covering national and international scientific literature. In addition, they enable access to different types of studies, such as experimental and observational, which are fundamental for the comprehensive synthesis necessary in an integrative review.

Articles published in English, Spanish and Portuguese were included in the study, without delimiting the date of publication, which present abstracts and information on access to prenatal care for pregnant women in situations of social vulnerability. They were grouped by methodology in order to identify methodological trends and how the findings relate to different approaches.

The search strategy will be through the following key: "Gestantes OR Pregnant women OR Mujeres Embarazadas OR Femmes enceintes" AND "Vulnerabilidade social OR Social vulnerability OR Vulnerabilidad Social OR Vulnérabilité sociale" AND "Cuidado Prénatal OR Prenatal Care OR Atención Prenatal OR Prise en charge prénatale". This strategy was adopted in all the chosen databases.

Initially, a screening of the articles was carried out by reading the titles and abstracts, which made it possible to exclude those in duplicate in the different databases, from studies that did not meet the inclusion criteria or the proposed theme. Thus, articles were selected for reading in full that answered the guiding question. Each stage of the selection process was documented in a systematic way, using a flowchart that illustrates the total number of studies found in the searches, the number of studies excluded after

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screening, the number of studies excluded after complete reading, and the final number of the review sample.

To favor the validation of the selection of publications for analysis, the articles were evaluated by two independent reviewers, considering the inclusion and exclusion criteria, and guided by the research question, and the divergences were resolved by a third reviewer. This process allowed the inclusion of consistent studies that contribute to the achievement of the objective and the exclusion of others that do not meet the necessary requirements. Certainty was assessed using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) to ensure the robustness of the conclusions[17].

Information was collected on how the studies define vulnerability, the characteristics of women (age, ethnicity/race, socioeconomic status, geographic location), the sample size, the barriers identified (socioeconomic, cultural, geographical, structural, psychological or emotional) and the actions to facilitate access. The data were organized and synthesized through the elaboration of a table containing the following items: identification of the article, authors, year and journal of publication, place (country/city) of production, objectives, methodological design, main results and evaluation of certainty. This approach helped in the collection of specific data to compare access difficulties and strategies between vulnerable and non-vulnerable women, providing a solid basis for the conclusions.

Finally, the results were integrated in a narrative way, allowing a holistic view of access to prenatal care among women in situations of social vulnerability.

As this is an integrative review, there was no direct interaction with humans or animals. The secondary data used were analyzed ethically, ensuring reliability and respect for the authors' copyrights.

The results of the study will be disseminated through a scientific article and presentation of work at scientific events in the area. The expenses for the implementation of this project will be the responsibility of the researchers.

## RESULTS

In the initial search, carried out in the databases, 1096 publications on the subject were found. By reading the titles and abstracts, it was possible to exclude those in duplicate in the different databases (n=388), studies that did not meet the inclusion criteria

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or the proposed theme (n=584) and those that were not available in full (n=109). Of these, 15 articles were selected for full reading, and the articles were eliminated for not meeting the inclusion criteria for achieving the research objective (n=10). The articles were evaluated by two reviewers from a team of four researchers, through independent selection considering the inclusion and exclusion criteria, and guided by the research question, to favor the validation of the selection of publications for analysis. Each reviewer recorded his or her evaluation and justification for inclusion or exclusion of the article in an instrument that contained the respective titles, abstracts, and database. The results were compared and disagreements were resolved by consensus among the reviewers, without the need to include an external reviewer. This process of validation of the selection of the final sample of articles allowed the inclusion of studies that presented consistencies and contributed to the achievement of the objective and the exclusion of others that did not meet the necessary requirements. The work took into account the ethical aspects of the research, respecting the authorship of the ideas, concepts and definitions present in the articles included in the review. Thus, of the 15 articles read in full, five answered the guiding question and, therefore, constituted the final sample of this review (Figure 1).

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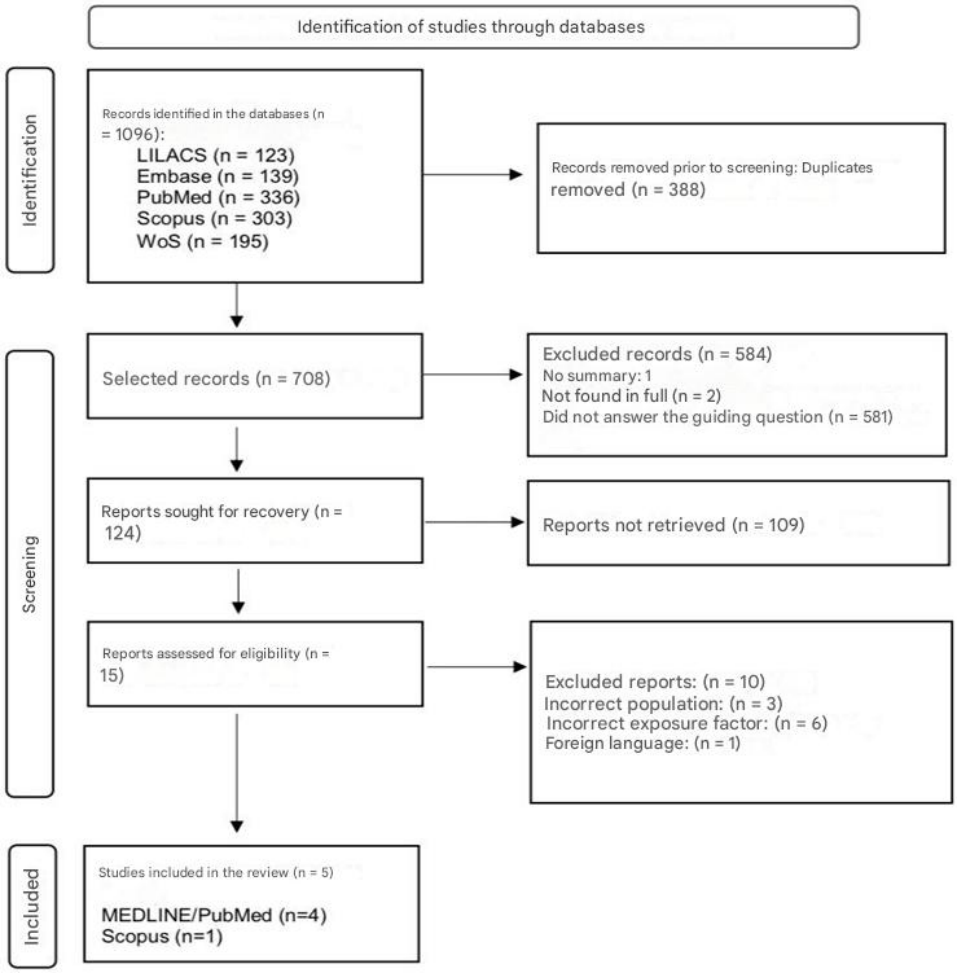
Figure 1 - Flow of the process of selecting studies for integrative review. Brazil, 2025.




Subsequently, the publications were analyzed and the data interpreted in an organized way and synthesized through the elaboration of a text containing the following items: identification of the article, authors, year and journal of publication, place (country/city) of production, objectives, methodological design, main results and evaluation of certainty, a classification that allows the identification of the profile of the studies developed on the investigated theme. Levels of evidence were determined by considering the hierarchy of evidence in the GRADE system, which classifies randomised controlled trials as high-quality evidence and observational studies as low-quality evidence. Factors such as limitations in study design, inconsistencies, indirect evidence, imprecision, and publication bias can lead to a decrease in the level of evidence.

Considering the criteria used in the data search, it was possible to select five articles that met the inclusion criteria to achieve the proposed objective. Most of the publications included in the sample were published in Medical Literature Analysis and Retrieval System

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Online (MEDLINE/Pubmed) (80%) and Scopus (20%). The selected articles were published between 2015 and 2020, two of which were published in 2015 (40%), two in 2018 (40%) and one in 2020 (20%). All studies involved studies of North American origin, being published in English, by authors who work in the health area, such as nurses, doctors, midwives and professors from various areas, with a greater concentration on Women's Health.

Regarding the types of studies included, the very low level of evidence prevailed in 60% of the sample (one experience report, one pilot program report, and one literature review), followed by the low level of evidence, prevalent in 40% of the studies (two observational studies).

A retrospective study of medical records analyzed the impact of the Shade Tree Early Pregnancy Program (STEPP), a free interprofessional clinic in the USA, showing that 40% of pregnant women started prenatal care late[18]. Another observational study and through the review of medical records, evaluated an intervention to optimize access to prenatal care in a low-income community, demonstrating that the rate of early initiation rose from 27% to 71.5% after measures such as extending hours and simplifying scheduling[19]. A qualitative analysis examined the implementation of the Centering Pregnancy model in Haiti and identified structural and cultural challenges in the adoption of group care[20]. On the other hand, a case study reports the experience of a pilot program of home visits for homeless pregnant women in Hawaii, pointing to gains in the humanization of care, but also institutional barriers[21]. A literature review with interviews with experts investigated the potential of digital technologies to reduce disparities, highlighting the use of electronic medical records and mobile communication to optimize care[22].

In the analysis of the studies, it was found that there was a multiplicity of actors involved in studies on the social vulnerability of pregnant and puerperal women, in addition to several strategies adopted by health services and professionals to ensure access and adherence to prenatal care for pregnant women in situations of social vulnerability, evidencing the challenges for implementing the proposed actions. This complexity involving prenatal care for vulnerable women allowed the construction of two thematic categories, namely: "Strategies to improve access to and quality of prenatal care for vulnerable pregnant women" and "Challenges for adherence to prenatal care by pregnant women in situations of social vulnerability".

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## STRATEGIES TO IMPROVE ACCESS TO AND QUALITY OF PRENATAL CARE FOR VULNERABLE PREGNANT WOMEN

The studies identified innovative strategies, including the use of health information technology, to increase access to timely prenatal care, improve the quality of prenatal care, and improve the organization and delivery of these services, with the aim of reducing disparities in the quality of prenatal care in low-resource settings(22).

The review of the articles indicates several strategies adopted by health services and professionals to ensure access to and adherence to prenatal care for pregnant women in situations of social vulnerability, such as access to timely prenatal care, quality of prenatal care, and management of prenatal care, as shown in Chart 1.

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Chart 1 - Characterization of strategies to improve access to and quality of prenatal care for women in situations of social vulnerability. Divinópolis-MG, Brazil, 2025

| | |
|---|---|
| Access to timely antenatal care | Public Policies[19]<br>Social support in vulnerable conditions[19,21-22]<br>Home Monitoring[21]<br>Continuous Monitoring[22]<br>Prenatal care in home visits[21]<br>Prenatal care in shelters[21]<br>Prenatal care in community centers[21]<br>Remote Antenatal Care[22]<br>Group Care[20]<br>Simplifying scheduling processes[19]<br>Priority scheduling for pregnant women with more than three months of pregnancy[19]<br>Flexible service hours[19]<br>Service after 6 pm and on weekends[19]<br>Mobile Use[21-22]<br>Use of Health Apps[22]<br>Use of telemedicine[21-22]<br>Use of Information Technology (Messages)[22] |
| Quality of antenatal care | Early recruitment[18] Early social support[18]<br>More efficient screening[19]<br>Personalized Follow-up[18]<br>Group Care[20]<br>Health education[20]<br>Support network with the participation of Community leaders[20]<br>Continuous Quality Improvement[22] |
| Antenatal care management | Service Integration[21-22]<br>Coordination of care between different health services[22]<br>Prenatal Care on Mobile Health Devices[21]<br>Information Technology for Spatial Mapping[22]<br>Telemedicine for monitoring[21]<br>Electronic Health Records[22]<br>Portable Electronic Records[21]<br>Text Message Communication[22]<br>Continuous Quality Improvement Program[22]<br>New operational and clinical processes[19]<br>Community Clinic[19]<br>Free Clinic[18]<br>Identification of barriers to access survey[19]<br>Standardized Protocols[19] |

Strategies aimed at ensuring access to timely prenatal care include the implementation of programs that bring care to pregnant women in situations of social vulnerability, eliminating geographical, financial, and structural barriers. One example is the Midwifery Integrated Home Visitation Program (MI-Home), which involved midwives and doctors providing mobile antenatal care and social support to pregnant women in vulnerable conditions. After three months, 10 pregnant women were attended, receiving medical assistance and social support. The initiative allowed for a more humanized and coordinated care, improving the prenatal care of these pregnant women[21].

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Another relevant initiative was the use of mobile technologies, such as telemedicine and health apps, which made it possible to carry out remote consultations and continuous monitoring of pregnant women. This resource has been shown to be especially useful for women who face transportation difficulties or live in areas with scarce health services, as pointed out by scholars in a study published in 2010[22]. Who also addressed information technology (IT) in health as a facilitator of the dissemination of the importance of preconception, early prenatal care and interconception care, through the use of the Short Message Service (SMS), which has many benefits over other modes of communication, including low cost, easy and convenient to use, and highly accessible and popular. This feature can also be used to facilitate the collection of data on race, ethnicity, and language spoken, and this data is critical for identifying risks, stratifying data, and identifying access gaps. They also highlight that health IT can also be used to facilitate the spatial mapping of access gaps in preconception and early prenatal care.

The expansion of public policies also played a significant role in ensuring access to prenatal care. The expansion of the Medicaid program in the United States, for example, allowed pregnant women without health insurance to access prenatal consultations at no additional cost. In addition, the simplification of scheduling processes and the increase in flexibility in service hours contributed to more women being able to start prenatal care in the first trimester of pregnancy. The rate of prenatal initiation in the first trimester increased from 27% to 71.5% after the intervention. Despite early uptake, there were no significant differences in gestational age at delivery or in the rate of vaginal delivery[19].

With regard to quality, the review shows that strategies to improve prenatal care were emphasized in the implementation of continuous quality improvement programs, the use of performance measures and strategies to improve prenatal care[19]. An example of these strategies is described as free clinics administered by students who, through early onset consultations, in the first trimester of pregnancy, were able to identify conditions that needed clinical treatment, as well as risk reduction counseling and social support were started earlier, continuing a personalized follow-up, aiming at the individuality of each pregnant woman[18].

On the other hand, the care of pregnant women in groups was used as a strategy to improve the care and adherence of these women, through an economic model that combines clinical evaluation with health education, based on the construction of a community, a support network, among the participants. The process involved the

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adaptation of the Centering Pregnancy model to a low-resource context, called Fanm Pale (Women Speak), with six sessions, covering topics related to pregnancy[20].

Regarding the improvement of the organization and delivery of prenatal care, innovative models were mentioned, such as the use of technology to map gaps in access and improve the continuity of patient records, the expansion of clinic hours, flexibility in scheduling, prenatal care using home visits and telemedicine as a means of monitoring[18-19,21-22].

An example of improvement explained was the implementation of the Midwifery Integrated Home Visitation Program (MI-Home), a pilot project carried out in Hawaii to improve access to prenatal care for pregnant women who are homeless or have difficulties accessing traditional health services. The program takes care services directly to pregnant women, eliminating barriers such as transportation, lack of documents or travel difficulties, consultations take place in safe places, such as shelters, community centers or in the pregnant woman's own home, ensuring greater adherence to prenatal care. Mobile health and telemedicine devices were also used to optimize follow-up, which include portable electronic records. This partnership initiative between community centers and telemedicine allowed for a more humanized and coordinated care[21].

Another means of improving antenatal care management highlighted in the review was the community clinic targeting low-income populations, which sought to improve rates of early entry into antenatal care by identifying and addressing barriers to access. Barriers were identified through patient surveys, focus groups, and consultations to understand the main obstacles to early start of prenatal care. Thus, based on this information, the clinic redesigned its operational and clinical processes, such as extending its opening hours, including service after 6 pm and on weekends. To improve early entry rates, the care team started to perform more efficient screenings, ensuring that pregnant women with more than three months of pregnancy received priority scheduling to start prenatal care as soon as possible. In addition, standardized protocols were introduced for the accurate calculation of gestational age, avoiding errors in scheduling and ensuring care within the appropriate period. The implementation of these strategies resulted in an increase of about 44.5% in the number of pregnant women who started prenatal care in the first trimester[19].

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## CHALLENGES FOR ADHERENCE TO PRENATAL CARE BY PREGNANT WOMEN IN SITUATIONS OF SOCIAL VULNERABILITY

The studies analyzed in this review identified several barriers for prenatal care to be accessible to all women, including: difficulties in accessing psychiatric services, transportation, bureaucracy to obtain documents and barriers to traditional medical care, language, literacy, physical space, cultural adequacy of the content and sociopolitical context[18-22].

The socioeconomic context was a preponderant factor in all studies regarding the difficulty of pregnant women participating in prenatal care. Populations with low resources, both financially and socially, had limited access to prenatal care. In an attempt to solve this issue, free clinics run by students would be an option, however, it is necessary to have the commitment of both the multidisciplinary care team and the participants, in addition to adequate health infrastructure and financial resources[18].

In order to improve the quality of prenatal care, researchers suggest the implementation of public policies involving accessible transportation and mobile health programs, which again returns to the difficulty of accessing financial resources to maintain this possibility[19]. In low-income communities, such as Haiti, community prenatal classes can be effective and promote adherence, but they need adequate physical space, in addition to the difficulty in maintaining women's participation being an obstacle, due to social stigma, cultural beliefs and economic limitations[20]. In women who are homeless, there are even more challenges to be faced, such as the absence of stable housing, food insecurity and a fragile support network. In view of this, scholars suggest the integration of health services, however, this population still faces great stigma and prejudice, and still does not feel safe and comfortable in seeking health services[21].

Women who are in lower economic classes receive poorer quality care when compared to those in more favored conditions, which is why specialists propose innovative strategies such as telemedicine, community education and updating the training of health professionals who serve this group of women, but they need solid funding and trained professionals[22].

Adherence to prenatal care in underserved populations is affected by socioeconomic, cultural, and educational factors. Poverty, lack of transportation, the cost of health care, and food insecurity are significant barriers, hindering access to and continuity of prenatal care. Innovations such as free student-run clinics, telemedicine and

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community support groups have proven effective in improving adherence to prenatal care, providing accessible and inclusive care, but they still face challenges in implementing these solutions, as they must be adapted to local realities to ensure the continuity and quality of prenatal care[18].

## DISCUSSION

The review of the articles reveals that the use of the term social vulnerability by the scholars, although they may vary in their approaches, converge in the understanding that this condition is strongly associated with socioeconomic, cultural, geographic and structural factors that impact access to prenatal care and the quality of care received(22). In general, vulnerability is described as a condition characterized by exposure to social, economic and health risks, often aggravated by inequality of access to basic services(19). In this sense, the words of Brazileiro and Francischetto(23) reinforce this conception by highlighting that social vulnerability is not limited to economic aspects, but is directly related to structural, cultural and institutional factors that restrict access to fundamental rights. In her research, she shows how social exclusion and the stigma restricted to the marginalization of certain groups hinders their inclusion in essential public policies, such as prenatal care. In addition, it highlights the role of the Public Defender's Office in promoting human rights education as a means of reducing inequalities and strengthening the social emancipation of vulnerable populations. In this way, the study corroborates the notion that vulnerability should not be understood only as an individual condition, but rather as a multifactorial complex, resulting from a historical and structural context that perpetuates inequalities and prevents the full exercise of citizenship.

Although studies indicate a higher incidence of social vulnerability among young people and adolescents, who often face additional barriers due to lack of family support and financial dependence, in the articles included in the study, women in vulnerable situations tend to present specific characteristics, such as wide age variation[20]. Ethnicity and race also play a significant role, with black, indigenous and Latino women often presenting greater difficulty in accessing prenatal care compared to white women, reflecting historical structural inequalities that perpetuate social exclusion and disparity in health care[22]. Socioeconomic status is another determining factor, as low-income women, without formal employment or without access to government-subsidized health services, face considerable challenges to initiate and maintain adequate prenatal care[21]. In addition,

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geographic location has a direct impact on this access, and women living in rural areas or urban peripheries often face long distances to health services, scarcity of care units and difficulties in transportation, making follow-up irregular or non-existent[19].

The main barriers identified in the studies include socioeconomic factors, such as lack of financial resources for transportation and consultations, absence of health insurance and impossibility of leaving work without financial loss[19]. Cultural barriers are also relevant, including low health literacy, lack of knowledge about the importance of prenatal care, and beliefs or distrust in the health system[22]. Geographical barriers are significant, especially for women who live in remote locations or without adequate infrastructure, where the distance to a health service can make prenatal care unfeasible[21]. In the structural sphere, there is a lack of trained professionals, scarcity of medical equipment and long waiting times for care, factors that discourage the continuity of follow-up[20]. In addition, psychological and emotional barriers are frequently mentioned, including the fear of judgment by health professionals, especially in cases of unplanned pregnancy, domestic violence or substance use, in addition to the stress and emotional overload resulting from social marginalization and the daily struggle for survival[22].

The literature corroborates these findings by reinforcing the relevance of cultural barriers, showing that the absence of health education for pregnant women contributes to the lack of knowledge about the importance of prenatal care and to late adherence to the prenatal follow-up service[24]. The fear of judgment on the part of health professionals, addressed in another study[22], is also highlighted in the article as a factor that discourages the search for prenatal care, especially among women in vulnerable situations, such as adolescents, low-income pregnant women and users of psychoactive substances. Another aspect that is in line with the findings is the influence of social and racial inequalities on access to prenatal care. While the review already points out that socioeconomic factors hinder adherence to follow-up[19], another study[24] reinforces that black women with low education levels are at greater risk of receiving inadequate care, either due to the lack of policies aimed at this population or due to the persistence of discrimination in the health system.

The studies analyzed present significant variations in the size of the sample, reflecting the different methodological approaches adopted. A study analyzed 428 medical records of women treated at a community clinic to assess the impact of early prenatal care and the factors that hinder access to this service[19]. Another study, carried out at the

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Shade Tree Clinic, collected retrospective data from 152 women treated between 2010 and 2013, focusing on pregnant women without health insurance and the challenges faced to start prenatal care[18]. On the other hand, the research that describes a pilot program aimed at homeless pregnant women in Hawaii does not specify an exact numerical sample, but highlights the difficulties in accessing prenatal care and the strategies implemented to mitigate these barriers[21].

Similarly, the study of a literature review and interviews with experts on innovative strategies to reduce disparities in the quality of prenatal care in contexts of vulnerability does not present a specific quantitative sampling[22]. Finally, other scholars analyzed the implementation of the group prenatal care model in Haiti, without detailing a specific sample, but emphasizing the structural, cultural and socioeconomic challenges that impact care for pregnant women in low-income communities[20]. These differences in sample sizes demonstrate the complexity of social vulnerability and allow for a comprehensive understanding of the factors that influence access to antenatal care in different contexts.

In an attempt to reduce the difficulties of early access and adherence to prenatal care for vulnerable pregnant women, the reviewed studies suggest strategies such as home visits, access to free clinics, telemedicine, support groups and expansion of service hours[18-22]. At this point, the researchers innovate by using free clinics for prenatal care of pregnant women who do not have health insurance as a strategy[18]. In them, interprofessional care, with medical and obstetric nursing students, under supervision, provided a more complete and accessible service, in addition to being continuous and with an educational support network, which allowed these women to adhere to it. In addition, the benefit was mutual, as it offered the volunteer academics a learning model that reconciles theory and practice, based on evidence; while contributing to the prenatal care of women in vulnerability[18]. Other scholars highlight a learning model that integrates teaching and service as an important learning method in the professional health context, which allows future professionals to enrich themselves with practical content, strengthening their education, while this approach allows an attempt to reduce the care discrepancies of the most underserved[25].

New approaches to assist pregnant women's adherence to and access to prenatal care are essential to ensure quality care during pregnancy, and should prioritize both the reception of these women who are in vulnerability and the establishment of a bond of trust with professionals[19]. In this context, the literature highlights the interconnection between

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patient embracement and the good relationship with the professionals who care for him/her, as a preponderant factor for treatment adherence[26].

Another innovative factor was the insertion of community leaders and the adaptation to the local reality in the support groups[21]. The literature emphasizes that the participation of traditional midwives and local health professionals was essential to increase the acceptance of support groups among pregnant women[20]. The importance of these groups within the context of health education is notorious, however, they often have difficulties such as inadequate structure, low adherence of professionals and users, lack of understanding of management; absence of formal referral, lack of organization regarding periodicity, schedule and planning[27].

Group interventions, with maternal health care and safe birth practices, help pregnant women in low-resource communities. Thus, the support and motivation of community leaders were essential to increase adherence to prenatal care, together with the adaptation of local realities and knowledge of the pregnant women who were participating, which allowed women to remain in the group[20]; it is also essential that professionals are prepared to deal with barriers and that there is joint planning based on the needs of the population[27].

A complementary means to ensure access to prenatal care is the extension of the opening hours of the health service, as discussed by scholars. The offer of consultations after 6 pm and on weekends allowed many pregnant women who previously faced difficulties in attending appointments due to work or lack of transportation to start monitoring earlier. As a result, the rate of prenatal care initiation in the first trimester increased and this measure helped to reduce absences, improve continuity of care and better distribute the demand in health services, making care more available[19].

In the Brazilian reality, the Health on the Spot Program, created by the Ministry of Health in 2019, has as its main objective to expand access to Primary Care by extending the opening hours of Family Health Units (USF) and Basic Health Units (UBS). By offering night and weekend care, the program enables pregnant women who work or have travel difficulties to be able to receive prenatal care in a more accessible way. In addition, the initiative contributes to the reduction of the burden in emergency rooms and hospitals, ensuring continuous and qualified follow-up during pregnancy, which can have a positive impact on maternal and child outcomes[28].

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The use of telemedicine was also seen as a strategy to access prenatal care as a means of improving the continuity of patient records and using telemedicine as a form of monitoring[22] and the use of telemedicine to provide virtual consultations during home visits, facilitating access to specialized care for pregnant women living on the streets, also to provide guidance and emotional support, especially in communities with limited access to face-to-face services[21]. In addition, the trajectory of telemedicine in Brazil is discussed, emphasizing how the adoption of information and communication technologies has been gradual and faces resistance, especially from health professionals who still do not clearly perceive its benefits[29]. This resistance is attributed to cultural issues, lack of familiarity with new technologies, and ethical and legal concerns. Similarly, researchers discuss the challenges in the adoption of health technologies in areas with limited resources, emphasizing the need for strategies that consider local specificities and promote acceptance by professionals and patients[22].

In Brazil, the implementation of telemedicine faces barriers related to regulation and medical ethics; the absence of clear guidelines and the need to update public policies are pointed out as obstacles to the definitive integration of telemedicine in the health system[29]. The literature mentions similar challenges when implementing telemedicine programs for vulnerable populations, emphasizing the importance of a solid legal framework that ensures the privacy and security of patient data[21].

Likewise, the strategy of home visits was explored by scholars as a way to expand access to antenatal care in a safe way, especially for pregnant women living on the streets, as the consultations were carried out not only at home, but also on the streets, in shelters and community centers, which crosses barriers such as the lack of transportation and the fear of stigma and prejudice in health services[21]. In this flexible and itinerant perspective, the Street Office strategy, instituted in 2011 by the Primary Care Policy, aims to expand access to health for the homeless population, based on multiprofessional teams that develop comprehensive health actions, following the principle that, in Brazil, the responsibility for health care for the homeless population as for any other citizen is of each and every professional in the homeless population. Unified Health System[30].

The analysis of the articles reveals the main challenges that hinder pregnant women's access to health services, namely: physical, financial, structural and educational barriers, since public transportation is difficult to reach, especially for pregnant women in rural areas or living on the streets[21]. In consonance, science reinforces how much these

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factors affect the quality of health care for vulnerable groups; such as disabled, illiterate and elderly people; directly interfering in the entry and quality of health services[31]. There are also financial and structural obstacles, such as the lack of resources for transportation to prenatal consultations, food insecurity and difficulties in acquiring necessary medications and supplements, those not provided by the government; and structural, such as restricted opening hours in clinics, make it difficult for women workers to attend and overload health services, with long waiting times for consultations and exams[19].

Likewise, education reflects the low level of literacy, which makes it difficult to understand the importance of prenatal care and clinical guidance. Cultural norms and traditional beliefs can influence women's decision to seek prenatal care, especially in communities with a strong presence of traditional midwives[20]. In this sense, health literacy, a concept that explains the individual's social and cognitive capacity, related to access, understanding and application of health information, to promote decision-making in situations involving their health, is welcome in an attempt to explain the phenomenon[32].

In the studies selected for this review, the fear of discrimination and stigma that keep pregnant women in vulnerable situations, such as adolescents, substance users, and homeless women, standing out; in addition to the absence of a family and social support network, which generates chronic stress that hinders adherence to prenatal care[21]. This last factor is also strongly linked to women's mental health, in which it is observed that social support is a protective factor for mental health, reducing the presence of emotional and physical symptoms related to psychological changes, in addition to acting as a reducer of the effects of stress[33].

Finally, the authors concluded in their studies that, despite the progress of some strategies, there is still a gap in research on innovations in prenatal care, especially to ensure access to women in situations of social vulnerability[19]. Humanization, within this perspective, allows for the coverage of vulnerability almost in its entirety, acting in the integrality of care for women, but even so, critical reflection is needed on the part of the professionals who care for this group[34]. Despite presenting promising results, most of the available studies on the subject lack a rigorous methodology for impact evaluation, since they analyze only specific contexts, based on small samples and without a comparison group. Although they are applicable to similar contexts, the results of the studies restrict the strength of the conclusions because they do not present a robust quantitative analysis that confirms the effectiveness of the proposed strategies, contributing to a lower level of

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evidence. There is a need to invest in systematic review studies with meta-analysis or randomized clinical trials, in order to increase the level of evidence of the studies[19]. Within the health sciences, evidence-based practice is indispensable for the foundation of new proposals and strategies, reinforcing the need to consider good levels of evidence in studies[35].

Another relevant point is that most studies focus only on the implementation of strategies, without a robust quantitative analysis of long-term impacts. Factors such as adherence to prenatal care, reduction of obstetric and neonatal complications, as well as maternal-infant outcomes after the adoption of interventions, are still little explored[19]. It is of paramount importance for decision-making, clinical assistance and the creation of guidelines, the presence of studies that fully understand the effects of an intervention, and it is necessary to carry out robust quantitative analyses that consider the long-term impacts; By integrating these rigorous methodological approaches, researchers can provide more reliable data, so investing in studies that use randomized clinical trials and long-term analyses is essential to improve the quality of health care and patient outcomes[36].

## CONCLUSION

The review shows that the main difficulties faced by pregnant women in accessing prenatal care stem from socioeconomic, logistical, structural and sociocultural factors. Barriers such as inadequate transportation, cost of health care, food insecurity, difficulties with literacy and language, restricted service schedules, overcrowding, bureaucracy to obtain benefits, and absence of documents negatively impact adherence to care. In addition, the lack of health units close to areas of low socioeconomic index, the disorganization in the triage systems and the precariousness of physical spaces make access even more difficult. In the sociocultural sphere, the fear of stigma and discrimination, traditional beliefs, chronic stress and the absence of family support are also relevant challenges.

In view of these difficulties, the reviewed studies present several strategies to expand access to and adherence to prenatal care, such as access to timely prenatal care, which involves public policies, social support in vulnerable conditions, home monitoring, continuous monitoring, care in shelters and community centers, remote antenatal care, telemedicine, with the use of mobile devices, health applications, group assistance,

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simplification of the scheduling process and flexibility of the opening hours of health services. As for the means that improve the quality of prenatal care, aiming at adherence and access, early recruitment, early social support, more efficient screenings, personalized follow-up, health education, support network with the participation of community leaders and continuous quality improvement were recognized.

Strategies in care management were also pointed out, in order to integrate health care services, care coordination, the use of mobile health devices, information technology for spatial mapping, portable electronic medical records, communication via text message, insertion of continuous quality improvement programs and community clinics. Despite the advances provided by these strategies, the review points out that the absence of methodologically rigorous studies, with randomization and control, limits the ability to establish causality between interventions and their impacts. Although evidence suggests that such initiatives can improve adherence to prenatal care and maternal and child outcomes, the literature lacks robust evaluations that analyze their long-term effects. In addition, socio-cultural and structural factors remain significant obstacles, requiring an intersectoral approach to be effectively addressed.

Thus, it is essential that public policies are strengthened to ensure accessible and quality prenatal care for pregnant women in vulnerable situations. The equitable structuring of health services, adequate funding, and articulation between different sectors, such as health, social assistance, and education, are essential to ensure the sustainability of initiatives and ensure a real impact on the quality of life of pregnant women and their children. Thus, this study reinforces the need to promote structural changes and effective policies that ensure the right of all women to humanized and quality prenatal care.

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