

# Barriers related to prenatal care utilization among women

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## ABSTRACT

**الأهداف:** إعادة النظر في دراسات الحواجز ذات الصلة استخدام الرعاية قبل الولادة بين النساء.

**الطريقة:** هذه الدراسة كانت مراجعة منهجية . البيانات جمعت من خلال البحث في قاعدة البيانات واستعمال الكلمات الخاصة و المعايير التعمق في البحث . الكلمات الخاصة كانت الاتي: " الحاجز " , " وصول " الرعاية قبل الولادة للنساء " و " العوامل المثبطة " . العوامل المنطقية كانت OR ، AND . بعد الدراسة و التعمق في المقالات المختلفه ، مقالات غير مترابطة رفضت وحددت مقالات مترابطة و تبناها ملخصا لذل المقالات . معيار الاختيار المقالات انت الاتي : جميع المقالات المنشورة منذ 1990 الى 2015 ، بلغتين الإنجليزية والفارسية، العلاقة بين العناوين والملخصات ، اشارة الى الحواجز ذات الصلة استخدام الرعاية قبل الولادة و العدم تكرار في النتائج . ما ان وجود لاي قيد المكاني لدخول المقالات . معيار الخروج شملت، دراسات الحالة و عدم الحصول على النص الكامل لبعض المقالات .

**النتائج:** بعد البحث في قواعد بيانات مختلفة، تم العثور على 112 المقالة . منهم 67 مقالة غير مترابطة التي اُحذفت من القائمة للتحقيق، 45 مقالة دخلت في هذا البحث و في بين هذه المقالات وجدنا في 25 مقالة منهم الت رار او عدم التطابق بين المنهجية والبيانات او النتائج و في النهاية انتخبت 20 مقالة منهم للتحليل النهائي . الحواجز ذات الصلة استخدام لرعاية قبل الولادة بين النساء ينقسم الى مختلف المجالات مثل الحواجز الفردية، والحواجز الاقتصادية، الحواجز المنظمات، والحواجز البنية والحواجز الاجتماعية والثقافية .

**الخاتمة:** هذه الدراسة و لأول مرة تنص على مراجعة منهجية لحواجز ذات الصلة الاستخدام لرعاية قبل الولادة بين النساء . يبدو ان لزيادة من تغطية الرعاية قبل الولادة يجب أن نعطي الاهمية اللازمة لجميع الحواجز، خاصة الحواجز الفردية، والحواجز الاقتصادية . من الضروري للدراسات الجديدة ان يتمز على تأثير التوعية وتشجيع النساء للحد من الحواجز وزيادة من تغطية الرعاية قبل الولادة .

**Objectives:** To investigate barriers related to prenatal care utilization among women.

**Methods:** Data was collected in both English and Persian databases. English databases included:

the International Medical Sciences, Medline, Web of Science, Scopus, Google Scholar. The Persian databases included: the Iranmedex, the State Inpatient Databases (SID) with the use of related keywords, and on the basis of inclusion-exclusion criteria. The keywords included are barrier, prenatal care, women, access, and preventive factors. OR and AND were Boolean operators. After the study, articles were summarized, unrelated articles were rejected, and related articles were identified. Inclusion criteria were all published articles from 1990 to 2015, written in English and Persian languages. The titles and abstracts are related, and addressed all subjects about barriers related to prenatal care utilization. At the end, all duplicated articles were excluded. There were no restrictions for exclusion or inclusion of articles. Exclusion criteria were failure in reporting in studies, case studies, and lack of access to the full text.

**Results:** After searching various databases, 112 related articles were included. After reviewing articles' titles, 67 unrelated articles and abstracts were rejected, 45 articles were evaluated, 20 of them were duplicated. Then, the qualities of 25 articles were analyzed. Therefore, 5 articles were excluded due to not mentioning the sample size, mismatches between method and data, or results. Total of 20 articles were selected for final analysis. Prenatal care utilization barrier can be divided into various domains such as individual barriers, financial barriers, organizational barriers, social, and cultural barriers.

**Conclusion:** To increase prenatal care coverage, it is necessary to pay attention to all domains, especially individual and financial barriers.

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Health care is continuous care from childhood to adulthood and prenatal care is one of the care chains.<sup>1,2</sup> Prenatal care has been identified as services before birth and performed in various forms by different providers in the world.<sup>2</sup> According to the World Health Organization, prenatal care includes integrated approaches to medical care, psychological and social support and its optimal conditions start before pregnancy and continues after birth. This comprehensive program includes: early detection of pregnancy, the first visit for prenatal care and follow-up visits after childbirth.<sup>3</sup> The purpose of antenatal care during pregnancy and after delivery is the healthy birth without harm to the mother's health.<sup>4</sup> The World Health Organization emphasized that prenatal care in achieving the Millennium Development Goals (reduction of child and maternal mortality) plays an important role, also said that all women should have access to proper care during pregnancy until 2015.<sup>5</sup> Since the maternal and child health promotion is Millennium Development Goal, the estimates of maternal mortality by international agencies of the United Nations shows the reduction in maternal mortality in all over the world, but it seems that the speed of the progress in achieving the Millennium Development Goals has been inadequate.<sup>6</sup> During 2013, Approximately 800 women in the world died daily due to complications of pregnancy and childbirth. The risk of women's death in a developing country due to complications of pregnancy and birth is 23 times higher than a developed country.<sup>7</sup> At a global rate, 83% of pregnant women who are living in the developing countries have received prenatal care only once.<sup>8</sup> Women living in developed countries received more prenatal care than those who are living in the developing countries.<sup>9</sup> Access barriers, inequitable and low coverage of health services in developing countries include political, financial, operational, and socio-cultural barriers.<sup>10</sup> Health care is one of the largest service sectors.<sup>11</sup> There is no accepted definition of access to health care.<sup>12</sup> Access to health services means the appropriate use of individual health services to attain the best health consequences.<sup>13</sup> Access barriers to health services can be divided into 2 categories: supply and demand barriers. Effective factors on demand barriers are the inability to use health services on individuals, family or society, while the supply barriers involve inherent aspects of

health system which can prevent the use of services by individuals, families and society.<sup>14,15</sup> Low-level access may be due to lack of awareness, information, resources, facilities, health care providers, and cost of services. Costs can include the cost of supplies, medicine and transportation. In many cases, the family will be poor because of the cost.<sup>16,17</sup> Affecting factors on supply and demand of health services include demographic characteristics, gender distribution, age pyramid, population growth rate, disease incidence, health policy, health insurance expansion, GDP, per capita income, science and technology development, medical and cultural characteristics.<sup>13,18</sup> In the review articles, the latest scientific information is evaluated. The purpose of these articles is not only to gain information but also to evaluate and interpret them. Systematic review helps the readers to make decisions about agreements and disagreements and, if necessary, refer them to key resources in articles for more information.<sup>19</sup> Based on our review, there was no written systematic review about the present title. Due to the importance of prenatal care utilization by women, and the outcomes of not using it, which may cause maternal and child mortality, the purpose of this study is to investigate barriers related to utilization of prenatal care services among women.

**Methods.** This study is a systematic review of data collected in both English and Persian databases. The English databases are International Medical Sciences, Medline, web of science, Scopus, Google Scholar. The Persian language databases are Iranmedex, SID with the use of related keywords and on the basis of inclusion-exclusion criteria. Keywords include: "barrier", "prenatal care", "women", "access to healthcare" and "preventive factors". Boolean operators were OR and AND. After study, articles were summarized, unrelated articles were rejected and related articles were identified. Search was performed by three researchers independently from April to August 2015. Inclusion criteria were all published articles from 1990 to 2015, which were written in English and Persian languages, the titles and abstracts are related, and addressed all subjects about barriers related to prenatal care utilization. And, at the end, all duplicated articles are excluded. There were no restrictions for exclusion or inclusion of articles. Exclusion criteria were failure of reporting in studies, case studies and lack of access to the full text. Studies, which did not meet criteria, were excluded after the search. Exclusion criteria were unrelated topics or availability of abstracts only. To analyze the standard reporting of quantitative article, STROBE (Strengthening the Reporting of Observational Studies in Epidemiology)

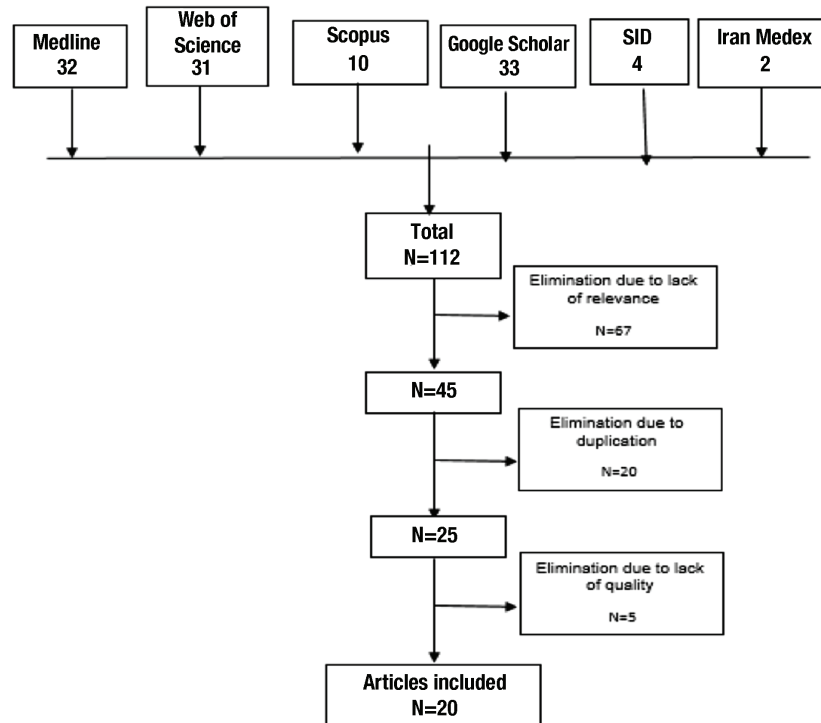
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checklist was used and COREQ (Consolidated criteria for reporting qualitative research) checklist was used for qualitative articles.<sup>20,21</sup> The papers that were selected were those whose quality was confirmed by these checklists. The risk of bias was determined independently by two external observers using the Newcastle-Ottawa Scale.<sup>22</sup> To assess the risk of bias in studies, Newcastle Ottawa scale was used. This checklist was used in case-control, cross-sectional and cohort studies. Maximum point in Newcastle Ottawa scale is 9. In our assessment, if the study had 7 points or more, it would be considered highly qualified.

**Results.** After searching in various databases, 112 related articles were found. After reviewing article titles, 67 unrelated articles and abstracts were excluded, 45 articles were evaluated, 20 of them were duplicated, and the quality of 25 articles were analyzed. Therefore, 5 articles were excluded due to not mentioning the sample size, mismatches between method and data or results. At last, 20 articles were selected for final analysis (Figure 1). Prenatal care utilization barrier is summarized in the following sections (Table 1). Barriers were divided into 5 groups. Individual barriers were related to women and family, organizational barriers

were related on health system, financial barriers were economic status of women, structural barriers were related to organizations that affected on health indirectly.<sup>23</sup> Social and cultural barriers have focused on languages, different conceptions of gender and sexuality and specific ethnic groups.<sup>24</sup> Among the above mentioned barriers, individual barrier,<sup>25-31</sup> and financial barriers<sup>32-37</sup> are more observed. Other barriers were in the next ranks.<sup>38-44</sup>

**Discussion. Individual barriers.** In our study, women negative attitude to health care was one of the most important prenatal care utilization barrier (Figure 2). The relationship between pregnant women and health care providers is very important and in early pregnancy can affect subsequent prenatal care. When a woman thinks that next prenatal care is carried out by the prior provider, the relationship is formed, it can be important for after care utilization by women.<sup>45</sup> Public awareness promotion on the importance of prenatal care and its benefits for the child and mother's health care may eliminate negative attitude toward health care. Encouraging Factors for pregnant women to prenatal care utilization include awareness promotion about the need to be healthy, disease complications, prenatal



**Figure 1** - Study selection diagram of 112 related articles regarding barriers related to utilization of prenatal care services among women.

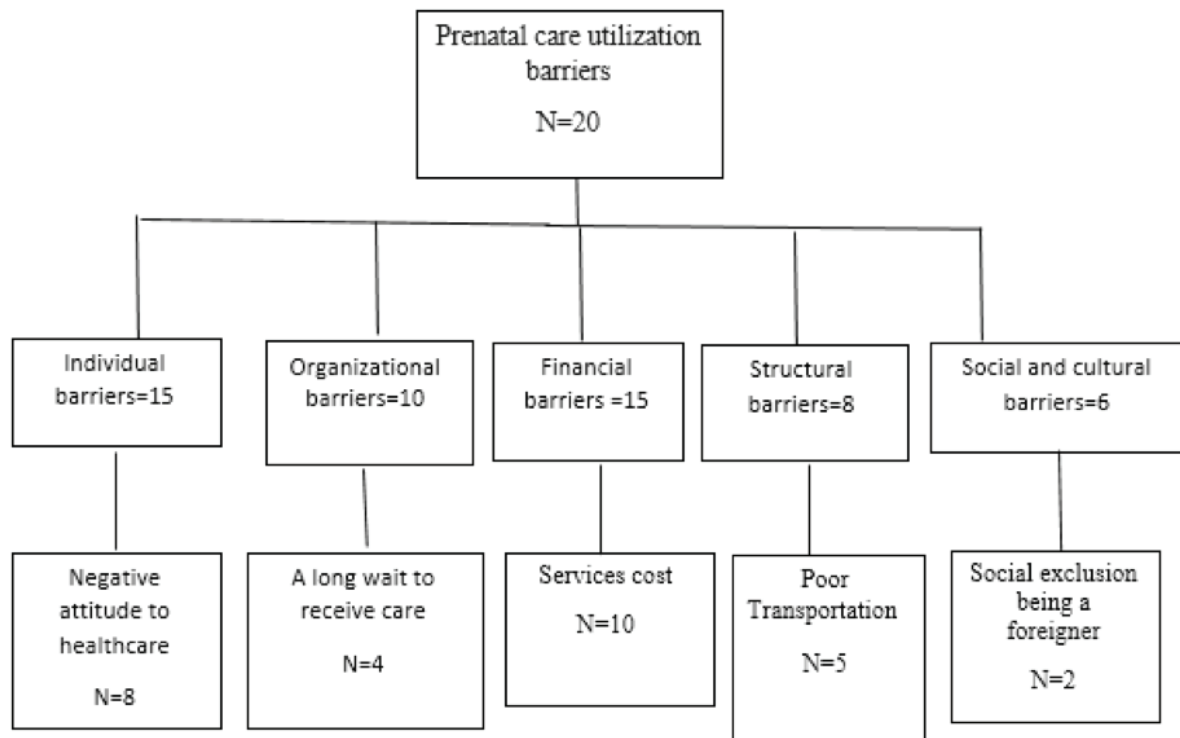
**Table 1** - Studies in barriers related to prenatal care utilization.

Title	Authors	Type of study	Location	Samples number	Statistical procedures	Barriers to prenatal care services ( <i>p</i> -value)
Barriers to prenatal care for low income women (1993)	Barba et al <sup>25</sup>	Cross-sectional	California	69 women in postpartum ward	Data analysis was performed using SPSS, regression analyses	Poverty, negative attitude to health care, lack of health care importance for personnel ( <i>p</i> <0.01)
Barriers, motivators and facilitators related to prenatal care utilization (2014)	Heaman et al <sup>26</sup>	Case-control	Winnipeg, Canada	202 cases 406 control, women in postpartum ward	Data analysis was performed using SPSS version 19, OR, and 95% CI	Family problems, depression, child care, arrest fear, long wait to health care, unwanted pregnancy, abortion thinking, prenatal care attitude ( <i>p</i> <0.01)
Barriers to prenatal care among low-income women (1990)	Kalmuss & Fennelly <sup>27</sup>	Descriptive	New York	496 pregnant women	Data analysis was performed using SPSS, regression analyses	Care cost, lack of insurance, none native, drug abuse, negative attitudes to health care ( <i>p</i> <0.05)
Barriers and motivators to prenatal care among low-income women (1990)	Lia-Hoagberg et al <sup>28</sup>	Descriptive	United States	15 women	Data analysis was performed using SPSS, Chi-square, and regression analyses	Psychosocial, structural, and socio-demographic factors were the major barriers, while the mother's beliefs and support from others were important motivators ( <i>p</i> <0.05)
Maternal perception of barriers to utilization of prenatal ultrasound in prenatal care in the northern part of Nigeria (2010)	Ohagwu et al <sup>29</sup>	Descriptive	Northern Part of Nigeria	596 pregnant women	Data analysis was performed using SPSS version 19, Pearson's correlation, ANOVA	Negative attitude, long distance, heavy financial costs, long waiting periods, unsatisfactory previous experience ( <i>p</i> <0.05)
Barriers to utilization of prenatal care services in Turkey (2003)	Erci <sup>30</sup>	Descriptive	Erzurum	446 pregnant women	Data analysis was performed using SPSS, Chi-square, and correlation analysis	Low education of pregnant women, unwanted pregnancy, negative attitudes toward pregnancy, and prenatal care ( <i>p</i> <0.05)
Barriers to prenatal care for Mexican and Mexican American women (1999)	Kalofonos & Palinkas <sup>31</sup>	Descriptive	San Diego California	173 pregnant women	Data analysis was performed using SPSS, regression analyses	Lack of trust informal, unwanted pregnancies, lake of the social network ( <i>p</i> <0.01)
Barriers and facilitators related to use of prenatal care by inner-city women (2015)	Heaman et al <sup>32</sup>	Qualitative	Wiping	24 health care providers	Data analysis was performed using NVivo version 9 and content analysis	Child care, transportation, addictions, lack of support, lack of time, negative behaviors, shortage of providers, distance, long waits, short visits
Prenatal care Barriers and its relationship to Pregnancy outcome (2011)	Hakari et al <sup>33</sup>	Cross-sectional	Tabriz	140 mothers in postpartum ward	Data analysis was performed using SPSS version 16. Chi-square, T-test, Spearman correlation, Kolmogrov Smirnov, and Kruskal Wallis were used to analyze data	Early married, low educated mother and spouse, family low income, lessee, parity and children, unwanted pregnancy, pregnancy complications, lack of prenatal care in the previous pregnancies, lack of encouraging factors, inappropriate situation of clinics ( <i>p</i> <0.01)
Determinants of inadequate prenatal care utilization by African American women (2007)	Johnson et al <sup>34</sup>	Cross-sectional	Washington	246 mothers in postpartum ward	Data analysis was performed using SPSS classification and regression trees analysis,	Psychosocial problems, substance use, childcare ( <i>p</i> <0.05)
Barriers to adequate prenatal care utilization in American Samoa (2014)	Hawley <sup>35</sup>	Cross-sectional	New Zealand	692 pregnant women	Data analysis was performed using SPSS, Chi-square, and ANOVA.	Parity, maternal unemployment, both parents being unemployed ( <i>p</i> <0.01)

**Table 1** - Studies in barriers related to prenatal care utilization (continues)

Title	Authors	Type of study	Location	Samples number	Statistical procedures	Barriers to prenatal care services
Factors affecting the utilization of antenatal care services (2010)	Ye et al <sup>36</sup>	Cross-sectional	Kham	310 women	Data analysis was performed using SPSS version 16, regression analysis, OR, 95% CI	No time, not necessary, feeling embarrassed, living far away from the facility, level of education, income, attitude, and cost of transportation and cost of service ( $p<0.01$ )
Barriers to prenatal care in Europe (2001)	Delvaux et al <sup>37</sup>	Case-control	Austria Denmark, Germany, Greece, Hungary, Ireland, Italy, Portugal, Spain, and Sweden	1283 women	Data analysis was performed using SPSS, OR, 95% CI	Lack of health insurance, aged <20 years, higher parity, foreign nationals, unmarried, unplanned pregnancy, less education, no regular income, child care ( $p<0.05$ )
Factors affecting access to prenatal care for USA/Mexico border-dwelling Hispanic women (1996)	Zaid et al <sup>38</sup>	Cross-sectional	USA/Mexico	752 mothers in postpartum ward	Data analysis was performed using SPSS and regression analysis	Lack of financial means to pay for care, lack of information concerning where to obtain care, inadequate infrastructure of clinic services, sadness, and depression ( $p<0.01$ )
Barriers to the use of basic health services among women (2013)	Chian et al <sup>39</sup>	Descriptive	Egypt	205 women	Data analysis was performed using Stata version 12, logistic regression, OR, 95% CI	Distance and transportation to health facilities, paying for health services, allocating time to go to health facilities, or concern about lack of female physicians, financial barriers. ( $p<0.01$ )
Barriers to uptake of emergency obstetric and newborn care services (2012)	Oyerinde et al <sup>40</sup>	Qualitative	Sierra Leone	123 women and 20 staff	Ko performed coding and text analysis using weft QDA qualitative analysis software	Inconsistent and unpredictable cost of services, inadequacy of supply and skills of healthcare providers, poor quality of care, disrespectful care, perennial shortages of equipment and supplies, and the lack of public utilities
Barriers to antenatal care use in Nigeria evidences from non-users and implications for maternal health programming (2015)	Fagbamigbe et al <sup>41</sup>	Cross-sectional	Nigeria	2199 pregnant women	Data analysis was performed using Stata 13 and SPSS version 20, Pearson, Chi-square	Wealth status, educational attainment, residence geographical locations, age and marital status, getting money problem to use anc services , unavailability of transport facilities ,getting money to go ( $p<0.05$ )
Barriers and facilitators to antenatal and delivery care (2015)	Mason et al <sup>42</sup>	Qualitative	Western Kenya	73 women, pregnant women, mothers of child born with an abnormality	Thematic analysis	Attitudes of clinic staff, long clinic waiting times, HIV testing and cost, barrier cost, unpredictable labor and transport, staff attitudes and husbands preference
Barriers to emergency obstetric care services in perinatal deaths (2011)	Jammeh et al <sup>43</sup>	Qualitative	Rural Gambia	20 survivors of severe obstetric complications	Content analysis	Transportation, distance, and road infrastructure, fear to blood transfusion, health care cost, not recognizing danger signs during pregnancy and labor
Barriers to access of maternity care (2013)	Byford-Richardson et al <sup>44</sup>	Qualitative	Kenya	22 women and staff	Thematic analysis	Fears associated with HIV testing or disclosure of HIV status, gender inequalities, and attitudes towards facility-based care

SPSS - Statistical Package for Social Sciences, OR - odds ratio, 95% CI - 95% confidence intervals, ANOVA - analysis of variance, QDA - qualitative data analysis, HIV - human immunodeficiency virus



**Figure 2** - Most of prenatal care utilization barriers.

care importance.<sup>23,46</sup> The use of health systems from media, which emphasizes health value in prenatal care, may make women's negative attitude to prenatal care positive. The innovative strategies suggested group prenatal care (with additional services) and use of health information technology to reduce inequalities, and to promote the qualities of prenatal care.<sup>47</sup>

**Financial barriers.** Financial barriers are the result of the family's economic situation. It appears poverty is to be most harmful for inadequate access to health care during pregnancy,<sup>23,48</sup> in many federal and states financial barrier eliminating policy to prenatal care for eligible women (family income below poverty line) is free.<sup>49</sup> These actions provide help to many pregnant women with problem insurance. Insurance of eligible women increases prenatal care access in other countries.<sup>47</sup> Governmental and non-governmental financial support affected to health care access. In other words, the public and private support through insurance in community increases health care access. However, there is little suggestion that eliminating financial barriers alone increases health care access.<sup>23,50</sup>

**Organizational barriers.** Most studies showed a long waiting period to receive prenatal care, which is a barrier. The problem of midwifery service providers

is the high numbers of clients, which cause lack of concentration and attention, fatigue in midwives and increase waiting time for pregnant women. On the other hand, lack of adequate skills in providing services could increase waiting time. Research results indicate that the change in health center working hours and the decrease of the gap between acceptance and examination of patients at the health center can reduce the waiting time.<sup>51</sup> Some studies suggested the increase in human and physical resources.<sup>52</sup> An appropriate time schedule can reduce patient waiting time without the need additional resources.<sup>53,54</sup> By creating small changes to existing processes such as the reduction of time of diagnostic and treatment services at some stations, waiting time for clients will be significantly reduced without additional cost and human resources. Not admitting a large number of clients at the same time, on time presence of staffs, the increase in the number of staff and facilities, appropriate schedule and planning table, the improvement of staffs' skills, experience and training, suitable information, may reduce waiting time in health services.

**Structural barriers.** Many women said transportation is a barrier to care. Therefore, ensuring the clinic is near

public transportation centers or clinic setting time can reduce transportation problems.<sup>55</sup> The community health center model is another proposed solution for access to prenatal care. This model allows women to have access to local health centers that adjust its services to specific communities. Women would be able to seek treatment in their own neighborhoods and have access to staff members that understand their needs such as language barriers and location issues. By using local and community-based health centers, child care problems will be resolved.<sup>23</sup>

**Social and cultural barriers.** In this study, social and cultural barriers had less effect on prenatal care utilization. Effective strategies to eliminate the psychological, social, and attitudinal barriers are solved by local community-based services, focus on communications, respect for indigenous peoples and their culture. Respect to family involvement in health issues is important.

More studies were descriptive or qualitative. The number of case-control studies was very limited and consolidated exploratory study was not seen in studies. Access limitation to journals and articles was another research limitation. The strength of this study is its subject. Prenatal care utilization barriers identification and minimizing could have an effective role in reducing mother's morbidity and mortality. The results of this study can provide basic information and accurate identification about barriers related to prenatal care utilization services for researchers. This result can be useful to design the effective strategies to increase prenatal care coverage and reduce maternal mortality in the future.

In conclusion, this study provides a systematic review of barriers related to use of prenatal care services for the first time. These barriers can be divided into various domains such as individual barriers, financial barriers, organizational barriers, structural barriers and social and cultural barriers. Most studies have been referred to women negative attitude to health care, services cost, financial problems, having a long waiting time to care and poor transportation as prenatal care barriers. To increase prenatal care coverage, it is necessary to pay attention to all domains, especially individual and economic barriers. Further studies should evaluate the effects of education and encouragement of women to reduce barriers and increase prenatal care coverage.

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