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**Research Article**



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**Prevalence of placenta previa in Iranian patients with  
preterm labor: A systematic review and meta-analysis  
based on the different provinces**

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**Abstract**

**Introduction:** The aim of this systematic review and the meta-analysis was to evaluate the Prevalence of placenta previa in Iranian patients with preterm labor.

**Methods:** All of the eligible studies were included in the data aggregation following a systematic review and the data was integrated using a forest plot. The random effects model was assessed based on the overall prevalence of the participants. Finally, a meta-analysis was conducted in STATA 14 statistical software.

**Results:** A total of 8324 patients suffering from pre-term labor disease were studied. The age of the participants varied between 16 and 45 years. Of the 3 studies, 1 presented cross-sectional data. A total of 3 studies from 3 provinces meeting the inclusion criteria were reviewed, studies were from Shahroud, Bojnourd and Ilam.

**Conclusion:** The Placenta Previa-associated preterm delivery is the most serious cause of death not only in infancy but also in childhood and adulthood. Placenta Previa affects the individual's physical, cognitive, and behavioral health, and it is now one of the most important challenges of general health.

**Keywords:** placenta Previa , Iran, preterm labor

**Introduction**

Placenta Previa is one of the rare cases of placental anomalies that partially or completely covers cervix and prevents vaginal delivery (1). Investigating the placenta is one of the most important parts of ultrasound examination of a pregnant uterus (2). The proper growth of the fetus completely depends on the placental support. Determining the location of placenta is of high clinical significance. This is due to the fact that most of the pregnancy complications, especially in the second trimester, are related to the problems of placenta (3). If pregnancy problems results in adopting aggressive diagnostic or medical methods such as caesarean, amniocentesis, umbilical cord blood sampling, intrauterine transfusion, and twin labor, the identification of the placental location will be more important (4). Bleeding is regarded as one of the main

three causes of death in pregnant mothers. As many as 40% of mothers' mortality is due to bleeding (5). The rates of preterm delivery and prenatal mortality in pregnancies that are associated with bleeding are four times higher than cases that have no bleeding. Placenta Previa is one of the common causes of bleeding in the third trimester of pregnancy (6). Placenta Previa is associated with numerous maternal and fetal complications. As a risky pregnancy, Placenta Previa calls for intensive care (7). The mortality rate arising from Placenta Previa is 10 times higher than that of natural pregnancies. The main complications of Placenta Previa include bleeding, preterm delivery, fetal anomalies, and intrauterine growth restriction (IUGR) (8).

The Placenta Previa-associated preterm delivery is the most serious cause of death not only in infancy but also in childhood and adulthood. Placenta Previa affects the individual's physical, cognitive, and behavioral health, and it is now one of the most important challenges of general health (9).

## Methods

### Inclusion Criteria (Eligibility Criteria)

The methods used in this systematic review were developed in accordance with the PRISMA checklist instructions. Cross-sectional, case control, and cohort studies were included in this research, and the case series, letter to editors, case reports, clinical trials, study protocols, systematic reviews, and narrative reviews were excluded.

### Search Strategy

The searches were conducted by two independent researchers in the international (PubMed, Web of Science, Scopus, and Google Scholar) and national databases (Magiran and SID) to find the relevant studies published in English and Persian languages since the creation of the databases until September 2018 (without time limitations).

### Study Selection and Data Extraction

Two researchers independently analyzed the titles and abstracts of the articles with regard to the research eligibility criteria. After omitting the redundant studies, the full texts of the studies were assessed against the eligibility criteria and the information on the authors was collected when required.

### Quality Assessment

The scale developed by Hoy et al. was used to assess the quality of the methodology and the risk of bias for each observational study.

### Data Aggregation

All of the eligible studies were included in the data aggregation following a systematic review and the data was integrated using a forest plot. The random effects model was assessed based on the overall prevalence of the participants. Finally, a meta-analysis was conducted in STATA 14 statistical software.

## Results

### Study Selection

A total of 201 articles were extracted through our preliminary searches in different databases. Of the 182 non-redundant studies identified by analyzing the titles and abstracts, 182 studies were ruled out due to irrelevant titles. Of the existing 19 studies, 3 studies met the inclusion criteria. (Fig. 1).



PRISMA 2009 Flow Diagram

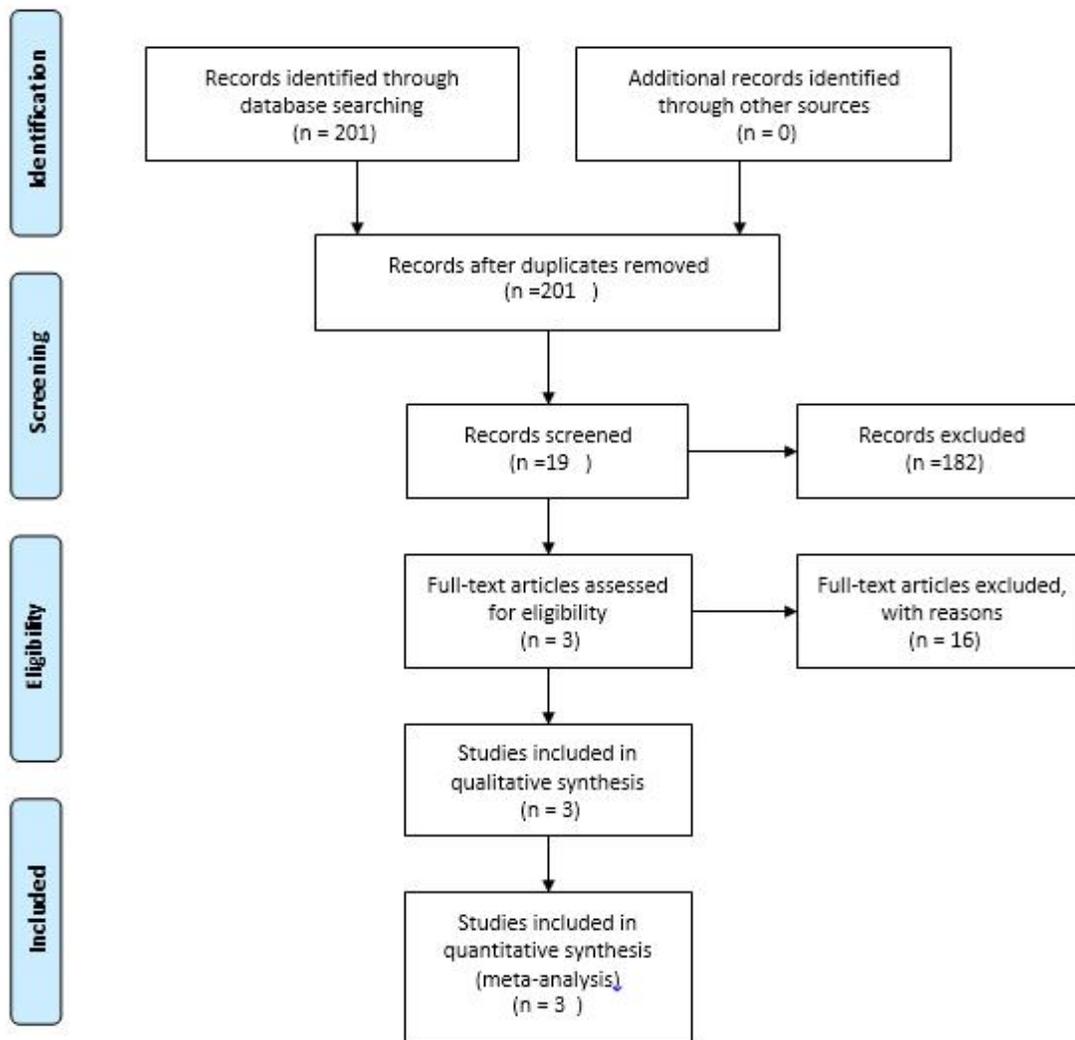


Fig 1 .PRISMA flow diagram

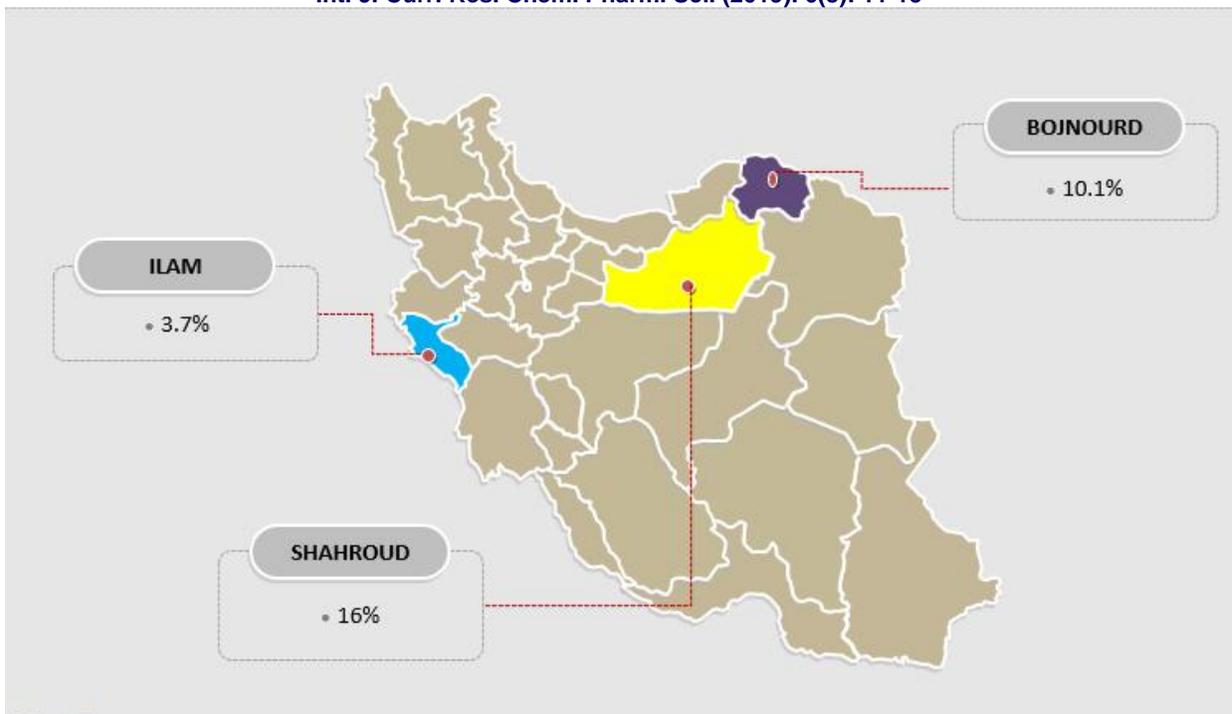
**Research Specifications**

A total of 8324 patients suffering from pre-term labor disease were studied. The age of the participants varied between 16 and 45 years. Of the 3 studies, 1 presented cross-sectional data . A total of 3 studies from 3 provinces meeting the inclusion criteria were

reviewed, studies were from Shahroud ,Bojnourd and Ilam. The most common sampling techniques were also simple sampling (n=3).More than 50% of the studies had low risk of bias. The most prevalent data collection methods were the interview and self-report methods used in 3 studies. The most common study locations were also hospitals (Table 1).

**Table 1 .Summary of included studies**

	First author	Publication year	participants	prevalence	City or province
1	Safari <sup>21</sup>	2003	1000	16%	Shahroud
2	Shojaa <sup>22</sup>	2015	3561	10.1 %	Bojnourd
3	Chehre <sup>23</sup>	2018	3763	3.7 %	Ilam



**Fig 2 . Prevalence of placenta Previa in Iranian patients with preterm labor based on the different provinces**

## Discussion

Since maternal mortality rate is one of the main indices of evaluating health system and even development in every society, it is essential to conduct a complete accurate examination of the related risk factors for planning to control and improve this index (10).

Given the developments of diagnostic methods including Doppler ultrasound and MRI for diagnosing abnormal adhesions and accurate cares during pregnancy, mothers' prognosis has significantly improved (11-13). However, the maternal and fetal mortality and morbidity rates of Placenta Previa cases are higher than those of natural pregnancies(14). Moreover, severe bleeding and preterm delivery in Placenta Previa cases are still the main causes of maternal deaths especially in third world countries (15). Placenta Previa is one of the main causes of vaginal bleeding in the third trimester. The prevalence of Placenta Previa is 0.30-8% (16). In the past few decades, Placenta Previa has steadily increased (17-19). However, its etiology is not completely known yet. The effect of abortion history, either optional or induction, has been confirmed in increasing Placenta Previa rate (20). Previous abortions increase the incidence rate of Placenta Previa; this is owing to the fact that possible endometrial injuries in frequent abortions can prevent successful placenta replacement.

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