Risk Factors for Preterm Labour in Diyala Governorate Case - Control Study
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Abstract

Background: Preterm birth is a major determinant of neonatal mortality, morbidity and childhood disability and remains as one of the most serious problems in obstetrics. Prematurity is now considered as the second-leading cause of death in children aged less than 5 years and as the most important cause of death in the critical first month of life.

Objective: To identify risk factors that were related to preterm birth and compare that with control sample.

Patients and Methods: A case control was carried out during the period from 1st August 2017 to 15th November 2017. Which including 100 cases and 100 controls. Where selected from Diyala city/Teaching AL-Batool hospital. Data collected by direct interview with patient using especially designed questionnaire.

Results: The result showed that the majority of cases were (29%) among age group (20-29) years. Some factors are showed significant such as age occupational state and number of abortion and other not significant like smoking.

Conclusion: This study shows The factors that found significant association with preterm birth consist of age, number of abortion, history of stillbirth, previous history of preterm birth, previous history of CS, placental problem during pregnancy, accidental hemorrhage, hypertension, Diabetes mellitus, urinary tract infection and antenatal visit. And factors which not have significant associated with PTB is parity, vaginal infection and smoking.

Keywords: Preterm, Delivery, Risk Factors, Diayla.

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Introduction

Preterm birth (PTB) also known as premature birth, is the birth of a baby at fewer than 37 weeks gestational age [1]. It is further classified into three main categories: mild, very pre-term and extremely pre-term for births occurring at 32–36 weeks, 28–31 weeks and less than 28 weeks respectively [2]. Preterm birth continues to be the leading cause of perinatal and postnatal mortality and morbidity especially in developing
countries, where health facilities are limited but are not functioning properly. In spite of our knowledge about the problem, globally, preterm births are possibly one of the commonest causes of maternal and child health problems in developed societies [3]. Babies born prematurely have increased risks of neurological developmental disorders such as severe cerebral palsy, mental retardation, sensory disturbances (impaired vision, hearing impairment) and hydrocephalus, or problems like learning difficulties, language, impaired concentration or attention, hyperactivity, motor disabilities, and cognitive problems. About one fifth of babies born under 32 weeks of age cannot survive the first year compared with 1% of deaths of infants born at the age of 33 - 36 weeks and only about 0.3% of infant deaths when the birth was at sufficient months [4],[5]. The cause of preterm birth is complex and multifactorial. Several factors are expected to increase the risk of the incidence of premature birth, including maternal age, education, parity, pregnancy interval, preterm birth history, history of abortion, preterm rupture of membranes (PROM), antepartum hemorrhage, antenatal care, and maternal diseases, for example hypertension, UTI and even some of preterm births that occurred spontaneously did not show apparent risk factors [6]. Knowledge of risk factors is crucial for predicting the incidence of preterm birth in order to reduce the incidence of premature childbirth[5].

Complications from preterm births resulted in 0.81 million deaths in 2015 down from 1.57 million in 1990 [7]. The chance of survival at fewer than 23 weeks is close to zero, while at 23 weeks it is 15%, 24 weeks 55% and 25 weeks about 80% [8]. The chances of survival without long term difficulties are lower [9].

Comparing with children born at term, preterm infants face a higher risk of several disabilities including neuro-developmental impairments, gastrointestinal complications, cerebral palsy, sensory deficits, learning disabilities, and respiratory illness [10]. The morbidity associated with preterm birth often extends to later life resulting in physical, psychological, and economic costs [11]. The precise role of events linked to an increased risk of preterm birth is unknown [12].

However, there have been a number of previous studies attempting to identify risk factors associated with preterm birth in different countries.

**Patients and Methods**

Samples: A case/control study was conducted in Diyala city/Teaching AL-Batool hospital. was chosen for this study and the sample was selected by (non probability convenient sampling) and the sample size was 200 included 100 cases with preterm birth and 100 controls with full term matched by age. The study started from 1st August 2017 to 15th November 2017. The data was collected by direct interview using special questionnaire to obtain socio-demographic information (age, occupation, education), and obstetrical history (twin,
birthspace interval, abortion and parity), chronic disease, and smoking.

Cases were defined as pregnant women with a preterm birth (29≤37 weeks) by vaginal delivery or cesarean section [1].

Controls were defined as pregnant women admitted to the same hospital with full term live birth (>37 weeks) by vaginal delivery or cesarean section.

**Cigarette smoking:** Based on maternal self-reporting, mother’s smoking status was categorized into 1 of 3 groups: "nonsmoker (did not smoke throughout the pregnancy), smoker (smoked during pregnancy), and passive smoker (had a household member who smoked more than 10 cigarettes per day inside or outside of the house)" [13].

**Statistical analysis**

Data was analyzed by SPSS package version 18. X2 test was used for significance of P-value of <0.05 was considered significant. Odds ratio with 95% confidence interval was used to appreciate the impact of different variables on the risk of presenting preterm birth.

**Results**

Table (1) shows that higher percentage (29.0%) of cases sample was in the age group (20-29) years, and the higher percentage (32.0%) of control was in the age group (20-29) years. This difference was statistically significant (P-value) = (0.04) and shows the higher percentage of cases in education level at secondary school is (18.0%), and the higher percentage of control in primary school is (24.5%), and the higher percentage of occupation of the sample in this study were housewife (34.0%) in cases and (46.5%) in control. This difference was statistically significant ("P-value") = (0.000).
Table (1): Distribution of Demographic characteristics sample according to cases and control

| Age        | Groups |            |            | Total | P-value |
|------------|--------|------------|------------|-------|---------|
|            |        | Cases | Controls |       |         |
|            | No     | %     | No        | %     | No      | %     |
| < 20       | 11     | 5.5   | 7          | 3.5   | 18      | 9.0   | 0.04 S |
| 20 – 29    | 58     | 29.0  | 64         | 32.0  | 122     | 61.0  |
| 30 – 39    | 26     | 13.0  | 26         | 13.0  | 52      | 26.0  |
| 40 and more| 5      | 2.5   | 3          | 1.5   | 8       | 4.0   |
| Total      | 100    | 50.0  | 100        | 50.0  | 200     | 100.0 |

Mean Std. Deviation
25.2 ± 0.671

Education level

| Illiterate | 11 | 5.5 | 11 | 5.5 | 22 | 11.0 | P-value = 0.02 S |
| Primary school | 34 | 17.0 | 49 | 24.5 | 83 | 41.5 |
| Secondary school | 36 | 18.0 | 23 | 11.5 | 59 | 29.5 |
| College and above | 19 | 9.5 | 17 | 8.5 | 36 | 18.0 |
| Total | 100 | 50.0 | 100 | 50.0 | 200 | 100.0 |

Occupation status

| Worker | 32 | 16.0 | 7 | 3.5 | 39 | 19.5 | P-value = 0.000 HS |
| House wife | 68 | 34.0 | 93 | 46.5 | 161 | 80.0 |
| Total | 100 | 50.0 | 100 | 50.0 | 200 | 100.0 |

*No = number, % = percent, P = probability level, S = significant at "P<0.05".

Table (2) shows the higher percentage of birth space less than 2 years (38.0%) in cases and (25.5%) in control. This difference was statistically significant (P-value) = (0.000).

Table (2): Distribution of birth space interval according cases and control

| Birth space interval | Cases | Controls | Total | OR | "95% CI" | P-value |
|----------------------|-------|----------|-------|----|----------|---------|
| No                   | %     | No | % | No | % |        |
| < 24 months          | 76    | 38.0 | 51 | 25.5 | 127 | 63.5 | 3.04 | 1.66-5.56 | 0.000 HS |
| ≥24 months           | 24    | 12.0 | 49 | 24.5 | 73  | 36.5 | -   | -        |
| Total                | 100   | 50.0 | 100| 50.0 | 200 | 100.0 | -   | -        |

*No = number, % = percent, OR = odds ratio, CI = confidence interval, P = probability level, HS = highly significant at "P<0.05".

Figure (1) shows the relation between hsCRP level and the severity of coronary artery disease among patients documented to have CAD and it showed that there was a significant differences between single, double and three vessels of coronary artery disease (P value = 0.000).
Table (3): Distribution of parity according cases and control

| Parity          | Cases No. | Cases % | Controls No. | Controls % | Total No. | Total % | OR  | 95% CI  | P - value |
|-----------------|-----------|---------|--------------|------------|-----------|---------|-----|---------|-----------|
| 1–3             | 51        | 25.5    | 62           | 31.0       | 113       | 56.5    | 0.606 | 0.32-1.11 | 0.026 S   |
| 4 and more      | 11        | 5.5     | 10           | 5.0        | 21        | 10.5    | 0.81 | 0.3-2.17 |           |
| No              | 38        | 19.0    | 28           | 14.0       | 66        | 33.0    | -   |         |           |
| Total           | 100       | 50.0    | 100          | 50.0       | 200       | 100.0   | -   |         |           |

*No = number  % = percent, OR= odds ratio, CI= confidence interval, P= probability level, N.S= non significant at P>0.05.

This table shows the higher percentage (25.5%) is non-abortion in cases, and higher percentage (34.5%) in control in non-

Table (4): Distribution of abortion according cases and control

| No. of abortion | Cases No. | Cases % | Controls No. | Controls % | Total No. | Total % | OR  | 95% CI  | P - value |
|-----------------|-----------|---------|--------------|------------|-----------|---------|-----|---------|-----------|
| 1–2             | 42        | 21.0    | 29           | 14.5       | 71        | 35.5    | 1.95 | 1.07-3.55 | 0.04 S   |
| 3–4             | 4         | 2.0     | 1            | 0.5        | 5         | 2.5     | 5.41 | 0.58-49.87 |           |
| ≥ 5             | 3         | 1.5     | 1            | 0.5        | 4         | 2.0     | 4.05 | 0.41-40.15 |           |
| No              | 51        | 25.5    | 69           | 34.5       | 120       | 60.0    | -   |         |           |
| Total           | 100       | 50.0    | 100          | 50.0       | 200       | 100.0   | -   |         |           |

*No = number  % = percent, ≥ more than and equal, OR= odds ratio, CI= confidence interval, P= probability level, S= significant at P<0.05.

This table shows the higher percentage in women not have history of stillbirth in women not have history of stillbirth in cases control (36.0%). This difference was (36.0%), and the higher percentage in statistically significant "(P-value)" = 0.009.

Table (5): Distribution of the sample according to still birth history

| History of still birth | Cases No. | Cases % | Controls No. | Controls % | Total No. | Total % | OR  | 95% CI  | P - value |
|------------------------|-----------|---------|--------------|------------|-----------|---------|-----|---------|-----------|
| Yes                    | 28        | 14.0    | 13           | 6.5        | 41        | 20.5    | 2.6 | 1.25-5.39 | 0.009 HS |
| No                     | 72        | 36.0    | 87           | 43.5       | 159       | 79.5    | -   |         |           |
| Total                  | 100       | 50.0    | 100          | 50.0       | 200       | 100.0   | -   |         |           |

*No = number  % = percent, OR= odds ratio, CI= confidence interval, P= probability level, H.S= highly significant at P<0.05.
Table(6) shows higher percentage of women not have multiple pregnancy (41.0%) in cases, and higher percentage of women do not have multiple pregnancy (48.0%) in control. This difference was statistically significant "(P-value)" =0.002.

**Table(6): Distribution of multiple pregnancy according cases and control**

| Multiple pregnancy | Cases | Controls | Total | OR   | 95% CI       | P-value |
|---------------------|-------|----------|-------|------|--------------|---------|
| Yes                 | 18    | 4        | 22    | 5.26 | 1.71-16.19   | 0.002 HS |
| No                  | 82    | 96       | 178   | -    | -            | -       |
| Total               | 100   | 100      | 200   | -    | -            | -       |

*No = number  % = percent, OR= odds ratio, CI= confidence interval, P= probability level, . H.S= highly significant at P<0.05.

Table (7) show higher percentage in women who do not have previous history of preterm delivery (43.5%) in control. This difference was statistically significant "(P-value)" = 0.000.

**Table(7): Distribution of previous history of preterm delivery**

| Previous history of preterm delivery | Cases | Controls | Total | OR   | 95% CI       | P-value |
|--------------------------------------|-------|----------|-------|------|--------------|---------|
| Yes                                 | 41    | 13       | 54    | 4.65 | 2.29-9.42    | 0.000 HS |
| No                                  | 59    | 87       | 146   | -    | -            | -       |
| Total                               | 100   | 100      | 200   | -    | -            | -       |

*No = number  % = percent, OR= odds ratio, CI= confidence interval, P= probability level, . H.S= highly significant at "P<0.05".

Table(8) shows the higher percentage in women who don’t have Previous delivery by CS (38.5%) in control. This difference was statistically significant "(P-value)" = 0.001.

**Table(8): Distribution of previous delivery by CS according cases and control**

| Previous delivery by CS | Cases | Controls | Total | OR   | 95% CI       | P-value |
|-------------------------|-------|----------|-------|------|--------------|---------|
| Yes                     | 46    | 23       | 69    | 2.85 | 1.55-5.24    | 0.001 HS |
| No                      | 54    | 77       | 131   | -    | -            | -       |
| Total                   | 100   | 100      | 200   | -    | -            | -       |

*No = number  % = percent, OR= odds ratio, CI= confidence interval, P= probability level, . H.S= highly significant at "P<0.05".
Table(9): shows the higher percentage in women who don’t have Placental problem during this pregnancy (38.5%) in cases , and the higher percentage in women who don’t have Placental problem during this pregnancy (45.5%) in control. This difference was statistically significant "(P-value)" = 0.007.

Table(9): Distribution according Placental problem during this pregnancy according cases and control

| Placental problem during this pregnancy | Cases  | Controls | Total | OR  | 95% CI | P-value |
|----------------------------------------|--------|----------|-------|-----|--------|---------|
| Yes                                    | 23     | 9        | 32    | 3.02| 1.31-6.91 | 0.007 HS |
| No                                     | 77     | 91       | 168   |     | -      | -       |
| Total                                  | 100    | 100      | 200   |     | -      | -       |

*No = number  % = percent, OR= odds ratio, CI= confidence interval, P= probability level, H.S= highly significant at P < 0.05

Table(10) shows the higher percentage in women who don’t have accidental hemorrhage (44.5%) in control. This difference was statistically significant "(P-value)" = 0.01.

Table(10): Distribution of Accidental hemorrhage according cases and control

| Accidental hemorrhage | Cases  | Controls | Total | OR  | 95% CI | P-value |
|-----------------------|--------|----------|-------|-----|--------|---------|
| Yes                   | 25     | 11       | 36    | 2.69| 1.24-5.84 | 0.01 S |
| No                    | 75     | 89       | 164   |     | -      | -       |
| Total                 | 100    | 100      | 200   |     | -      | -       |

*No = number  % = percent, OR= odds ratio, CI= confidence interval, P= probability level, significant at P<0.05.

This table shows the higher percentage in women who don’t "HB" is (37.0%) in cases, and shows the higher percentage in women who don’t "HB" is (43.5%) in control, and the higher percentage in women who don’t "DM" is (43.0%) in cases, the higher percentage in women who don’t "DM" is (48.0%) in control, and higher percentage in women who have "UTI" is (37.5%) in cases, and higher percentage in women who haven’t "UTI" (34.0%) in control, the higher percentage in women who don’t have vaginal infection is (49.0%) in cases and (48.0%) in control.
Table(11): Distribution of found disease during pregnancy according cases and control

| Found disease during pregnancy | Cases | Controls | Total | OR  | 95 % CI  | P-value |
|-------------------------------|-------|----------|-------|-----|----------|---------|
|                               | No.   | %        | No.   | %   | No.      | %       |        |
| Hypertension                  |       |          |       |     |          |         |        |
| Yes                           | 26    | 13.0     | 13    | 6.5 | 39       | 19.5    | 2.35  | 1.12-4.901 | 0.02 S |
| No                            | 74    | 37.0     | 87    | 43.5| 161      | 80.5    | -     | -        |        |
| Diabetes mellitus             |       |          |       |     |          |         |        |          |        |
| Yes                           | 14    | 7.0      | 4     | 2.0 | 18       | 9.0     | 3.9   | 1.23-12.32 | 0.01 S |
| No                            | 86    | 43.0     | 96    | 48.0| 182      | 91.0    | -     | -        |        |
| UTI                           |       |          |       |     |          |         |        |          |        |
| Yes                           | 75    | 37.5     | 32    | 16.0| 107      | 53.5    | 6.37  | 3.43-11.82 | 0.000 HS |
| No                            | 25    | 12.5     | 68    | 34.0| 93       | 46.5    | -     | -        |        |
| Vaginal infection             |       |          |       |     |          |         |        |          |        |
| Yes                           | 2     | 1.0      | 4     | 2.0 | 6        | 3.0     | 0.49  | 0.08-2.73 | 0.4 NS |
| No                            | 98    | 49.0     | 96    | 48.0| 194      | 97.0    | -     | -        |        |
| Total                         | 100   | 50.0     | 100   | 50.0| 200      | 100.0   | -     | -        |        |

Table shows (12) the higher percentage in women who visit antenatal ANC more than 4 visit (30.5%) in control, and this difference was statistically significant "(P-value)" = 0.02.

Table(12): Distribution of No. of antenatal center visit ANC according cases and control

| No. of antenatal center visit ANC | Cases | Controls | Total | OR  | 95 % CI  | P-value |
|-----------------------------------|-------|----------|-------|-----|----------|---------|
|                                  | No.   | %        | No.   | %   | No.      | %       |        |
| Less than 1 visit                | 4     | 2.0      | 5     | 2.5 | 9        | 4.5     | -      | -      | 0.02 S |
| 2 – 3                            | 18    | 9.0      | 34    | 17.0| 52       | 26.0    | 0.66   | 0.15-2.77 |
| ≥ 4                              | 78    | 39.0     | 61    | 30.5| 139      | 69.5    | 1.59   | 0.41-6.207 |
| Total                            | 100   | 50.0     | 100   | 50.0| 200      | 100.0   | -      | -      |        |

Table (13) shows the higher percentage in pregnancy women who are non-smoker (31.0%) in control, and this difference was statistically significant "(P-value)" = 0.9.
Table (13): Distribution of smoking according cases and control

| Smoking               | Cases       | Controls    | Total       | O R  | 95% CI     | P-value |
|-----------------------|-------------|-------------|-------------|------|------------|---------|
|                       | No.   | %     | No.   | %     | No.   | %     |          |       |
| Smokers               | 3     | 1.5     | 4     | 2.0     | 7     | 3.5     | 0.75     | 0.16-3.49 | 0.9 NS   |
| Passive smokers       | 35    | 17.5    | 34    | 17.0    | 69    | 34.5    | 1.02     | 0.57-1.85 |
| Non-smokers           | 62    | 31.0    | 62    | 31.0    | 124   | 62.0    |          |           |
| Total                 | 100   | 50.0    | 100   | 50.0    | 200   | 100.0   |          |           |

*No = number, % = percent, OR = odds ratio, CI = confidence interval, P = probability level, N.S = non significant at P>0.05.

Discussion

World Health Organization (WHO) defined premature birth or preterm birth as the birth occurring after 20 weeks and before 37 weeks of gestation [14]. Premature birth is a syndrome associated with neonatal morbidity, which has adverse consequences for long-term health [15].

In this study, most of the women in both study groups belong to the age (20-29) years age group, thus the maternal age of (20-29) years has been found to be the significant age group for preterm birth with P-value < 0.04%. The finding of the present study is in agreement with the study done by Samim A Al-Dabbagh et al. 2006 in Iraq [16], and by Shakhawan A. Ahmed. 2016 in Rania [18], and by FANAKA A, et al. 2016 in Tanzania [19], they have identified significant association between heavy work and preterm birth. This could be explained by the limiting the amount of work done by pregnant women and avoiding fatigue helps reduce the risk of "PTB" [20,21].

Regarding birth space interval (less than 2 years) was higher among women with preterm delivery (33%) compared to control group (25.5%) with significant association P-value <0.00%, this result is in accordance with the study done by Hayelom Gebrekirstos, et al. 2016 in Ethiopia [22], pregnancy interval makes a difference as women with 6 months span or less between pregnancies have two-fold increase in risk of preterm birth [23]. High parity have no significant association with preterm birth with P-value > 0.05. These results are similar with finding of the study by Samim A Al-
Risk Factors for Preterm Labour in Diyala Governorate Case - Control Study

Muna Abdul Kadhum Zeidan

Dabbagh et al. 2006 in Iraq [16] and by Adnan Lutfi Sarhan. 2015 in Palestine [17], and by FANAKA A, et al. 2016 in Tanzania [19], reported that the parity was not found to be significant risk factor of preterm birth. But this result dis agree with the study by Aragao VM, et al. 2004 in Brazil [24], found that prim parity is a risk factors of preterm birth, this could be explained the difference be tween these study and other study may refer to the strong family planning programs in these countries, which made the study sample to be at the same level in relation to parity. In this study, there is significant association between previous abortion, stillbirth with preterm delivery with P-value 0.00 the finding of the present study is agree ment with finding, reported by Samim A Al-Dabbagh et al. 2006 in Iraq [16]. Significant association was found between the multiple pregnancy and preterm birth were at greater risk of having preterm birth (OR: 5.26; 95% CI: 1.71-16.19) when compared with reference group. Similar finding were reported in study done by Adnan Lutfi Sarhan. 2015 in Palestine [17], and by FANAKA A, et al. 2016 in Tanzania [19], report that preterm birth and multiple pregnancies were found to have a positive effect on preterm birth (twins, triplets, and quad triplets) (P=0.001). Twin pregnancies carry a high risk of spontaneous preterm birth compared with singleton pregnancies this may be because multiple pregnancies cause over distension of the uterus and decreased levels of progesterone, which may lead to preterm labour, male presentation which indicates Caesar ean section [17].

Previous history of preterm birth was found to be a significant risk factor were at greater risk of having preterm birth (OR: 4.65; 95% CI: 2.29-9.42) when compared with reference group. Similar finding were reported in study done by FANAKA A, et al. 2016 in Tanzania [19], women who had spontaneous preterm birth (SPTB) were more likely to have a spontaneous preterm birth "(IPTB)" were significantly more likely to have had a previous indicated preterm birth, so "SPTB" are strongly repetitive [25].

This study demonstrated that the delivery by CS more (OR: 2.85) time, more to occurrence preterm birth than other group, 95% CI= 1.55-5.25 which carried a very highly significant association P-value <0.00, the result agree ment with the study done by Adnan Lutfi Sarhan, 2015 in Palestine [17]. Placental problem during this pregnancy was found to be a significant risk factor were at greater risk of having preterm birth (OR: 3.02; 1.31-6.91) when compared with reference group. Similar finding were reported in study done by Samim A Al-Dabbagh et al. 2006 in Iraq [16]. Accidental hemorrhage has also been suspected as a risk factor [26] in the present study, an OR of 2.69 The same result, was seen in study done by Samim A Al-Dabbagh et al. 2006 in Iraq [16], and by Nguyen N, Savitz DA, 2004 in Vietnam [26]. Reported that an OR of 2.31 for hemorrhage was found but was not significant this might be due to the small number of cases detected.
Urinary tract infections, diabetes mellitus, and pregnancy hyper tension were found to be significant risk factors "PTB" in this study, however, no association was observed between "PTB" and vaginal infection. These results are similar with findings of the study done by Samim A Al-Dabbagh et al. 2006 in Iraq [16], and by Adnan Lutfi Sarhan. 2015 in Palestine [17]. The incidence of these infections as determined by clinical case histories only and nondirect laboratory results were available to the authors. It is possible that women may confuse the two infections or maybe more prone to report urinary rather than genital infection. In this study, there is a significant association between antenatal visit with preterm delivery, with a P-value 0.02. The finding of the present study is agreement with findings reported by Samim A Al-Dabbagh et al. 2006 in Iraq [16], and by Kemenkes, R.I. 2014 in Indonesia [27].

There is no significant association between maternal smoking with PTB. These results are similar with finding of the study by Samim A Al-Dabbagh et al. 2006 in Iraq [16], and by Adnan Lutfi Sarhan. 2015 in Palestine [17].

Reported that maternalsmoking in general was not found to be significant CP = 0.113. This may be because social stigma women in Iraq have been reluctant to state their smoking habit [29].

Conclusions
This study shows higher rate of preterm birth occurs in age group 20-29 years. Factors that were associated with preterm birth were low educational level, There is high significant associated with housewife, short spacing less than 24 months, and multiparity, abortion history of stillbirth, multiple pregnancy and history of preterm delivery, previous delivery by CS, and low ANC visits. Obstetric problems of the current pregnancy seem to be crucial for the occurrence of preterm birth these in clude have placental problem and hemorrhage, hypertension, DM and UTI.

Maternal behaviors that appear to contribute to having a preterm birth were passive smoking.

Recommendations
Improving programs of health education and communication regarding pregnant women with prenatal and postnatal periods as early as possible. Using different type of mass media to stimulate public awareness about the risk factors of preterm labor.

Emphasizing a collaborated work among Ministry of Health, Ministry of higher Education, and Ministry of Environment to include within their curriculums a course regarding risk factor that leads to preterm labor.
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