Maternal Risk Factors Associated with Preterm Labor at Al -Najaf City

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Abstract:

Objective: this study aimed to identify the maternal risk factors associated with preterm labor.

Methodology: A descriptive case-control study has been carried out in Al-Najaf Al-Ashraf Health Directorate / Al- Zahra 'a Teaching Hospital from 20th September 2016 until August, 18th, 2017. A (Purposive Sample) of (100) women preterm as case group and (100) women full term as control group who were selected from Al Zahra Teaching Hospital. Data collected through interview of women questionnaire format was designed and four parts: part I socio-demographic, part II reproductive characteristic, part III factors related to newborn, part IV Past history, part V psychological status contain. Validity and reliability of the questionnaire were determined through pilot study. The descriptive and inferential statistical analysis procedures were used to analyze the data. Results: The result of the study reveal that the age of mother were ranged between (24-34) year's and the majority of women are from urban residential area and most of women have abortion, previous preterm labor, previous LBW. Also the study results show that the condition of baby has high risk for preterm labor. In addition, the results shows that the women with diabetes mellitus, hypertension, anemia, epilepsy, placenta previa, abruption placenta, UTI, premature rupture membranes, oligohydramnios, mal-presentation and hyperemesis gravidarum have high risk for preterm labor than other women do not have any complication. Conclusion: The study concludes that the gestational age for study sample have significant relation with preterm labor. Recommendation: The study recommends to emphasize on prenatal care as early as possible and improving health care services presented to the mother during pregnancy that the nurse must take the role in reducing the preterm labor.

Key words:Risk Factors, Preterm Labor.

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1. INTRODUCTION

Preterm labor is one of the largest single conditions in the global burden of disease analysis given the high mortality and the considerable risk of lifelong impairment. Preterm birth is a complex problem with a set of overlapping determinant factors. Risk factors may include socio-demographic characteristics, obstetrics history and medical conditions, many of these factors occur in combination, particularly in those who are socioeconomically disadvantaged. Detection of women at-risk and their risk factors for preterm labor is essential for initiation of risk-specific interventions and preventive strategies (1).

In the United States, preterm birth occurs in 12.8% of births and is the leading cause of neonatal mortality in the United States (2). The incidence of preterm labor (before 37 completed weeks or 259 days of gestation) is approximately 10.6% in North America and 6.2% in Europe .There are few dependable estimations from developing countries because of uncertainty about assessment of gestational age and ensuing dependence on low birth weight as a commission measure. We have formerly stated rate of among 17% and 24% in rural, public established studies from Malawi among women with anemia and in uncertain people of pregnant women respectively (3).

In developing countries, the main causes of preterm births include infectious diseases and poor availability and accessibility of health care resources. In high-income countries, the increase in the number of preterm births is linked to conception among older women and increased number of multiple pregnancies as a result of usage of fertility drugs. In some developing countries, medically unnecessary inductions and caesarean section deliveries before full term also increase preterm birth rates. In rich and poor countries, many preterm births remain unexplained (4).

There are main direct reasons for preterm labors in the United States. These include: idiopathic preterm premature rupture of membranes (PPROM), spontaneous unexplained preterm labor with intact membranes, twins and higher-order multifetal labors of all preterm labors, 30 to 35 percent are indicated, 40 to 45 percent are due to spontaneous preterm labor, and 30 to 35 percent follow preterm membrane rupture (5).

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Preterm delivery is one of the most important problems in pregnancy, as it is the primary cause of 75% of prenatal mortality and morbidities (6). Preterm labor is an progressively difficult condition with multiple risk factor and has substantial psychological, medical, economic and social impacts. It is the leading reason of neonatal mortality in the United States. Differentiated with term neonates, mortality rate for preterm (< 37 weeks) and very preterm babies (< 32 weeks) (7).

The incidence of preterm labor in developed countries has also been increasing, mainly due to more late preterm births and multifetal gestations. An increased rate of assisted reproductive technologies and more births to women older than the age of 35, which increases the risk for twinning, has led to the rise in multifetal gestations (8). Preterm labor has an increment percentage as a health problem. The number of patients who are admitted to Al-Najaf hospitals in 2016 was 4090 (9).

Objectives of the study:

1. This study aimed to identify the maternal risk factors associated with preterm labor.
2. To find out relationship between preterm labor and demographic data, reproductive characteristic, and past history.

2. MATERIALS AND METHODS:

Design of the Study:

A descriptive case-control study was adopted in order to achieve the stated objectives. The study began from September 20th, 2016 until August, 24th, 2017. A Non-Probability (Purposive Sample) of (100) women preterm as case group and (100) women full term as control group who were selected from Al Zahra Teaching Hospital.

An assessment tool is adopted and developed by the researcher to assess of psychological status for women with preterm labor. The final study instrument consists of three parts:

Part I.**Socio-Demographic Data:** This part consists of (8) items, which includes age, residency, level of education, occupational status , monthly income, type of family, smoking and body mass index.

Part II.**Reproductive characteristic:** This part consists of (11) items, including age at marriage, gravity, parity, still birth, abortion, previous preterm labor, previous LBW, birth interval, sexual activity, Planning for pregnancy, mode of last delivery.

Part III.**Past History:** This part consists of (5) items, including number of antenatal visit, diabetes mellitus, hypertension, renal diseases, anemia, epilepsy, placenta previa, abruption placenta, UTI, premature rupture of membranes, oligohydramnios, polyhydramnios, mal-presentation and hyperemesis gravidarum.

The data collection was done by applying of the developed questionnaire with aid of structured interview technique with the subjects as they were individually interviewed. The study subjects are interviewed in a similar way. The interview technique spend about 20-25 minutes for each subject.

Statistical Analysis

In this study the data were analyzed by using of (SPSS) program V 19 (Statistical Package for Science Service), and the statistical package (Excel 2010). Below are the statistical data analysis methods to evaluate the study result: Descriptive Data Analysis: This approach includes the following measurements: A- Frequencies and Percentages. B-Mean, Mean of scores (MS), C- Pearson's Correlation Coefficients to determine the reliability of questionnaire (Internal consistency) through using Alpha Cronbach and inferential data analysis: include Chi-Square test (X^2) to test the association between the studies variables according to its type.

Ethical consideration:

This is one of the most basic principles before gathering the data, to keep the patient's values and self-respect. The researcher achieved this agreement from the Ethical committee at the Faculty of Nursing / University of Kufa. The researcher promised to keep the patient's information confidential, and use these data for this study only then he explained the purpose of this study to each participant without affecting the routine visiting and care. In addition to above, the researcher told each participant that this is an involuntary work, and they can leave any time even the interview process is not completed.

3. THE RESULTS:

Table (1): Statistical distribution and difference between Study and control groups by their Socio-Demographic Data

Items	Sub-groups	Preterm Labor Total = 100		Full term Labor Total = 100		Chi-Square P-value *
		Freq.	%	Freq.	%	
Age / Years	13-23	40	40	34	34	χ^2= 0.98 P = .614 NS
	24-34	44	44	46	46	
	35-45	16	16	20	20	
Residency	Rural	28	28	18	18	χ^2= 2.82 P = .0929 NS
	Urban	72	72	82	82	
Levels of Education	Illiterate	43	43	26	26	χ^2= 9.56 P = .0889 NS
	read and write	16	16	24	24	
	Primary school graduated	22	22	22	22	
	Intermediate school graduated	6	6	9	9	
	Secondary school graduated	5	5	3	3	
	Institute and above	8	8	16	16	
Occupation Status	Employed	5	5	11	11	χ^2= 2.25 P = .1332 NS
	Housewife	92	92	89	89	
Monthly income	Sufficient	36	36	50	50	χ^2= 4.37 P = .1125 NS
	Barely Sufficient	44	44	37	37	
	insufficient	20	20	13	13	
Smoking	Active Smoking	36	36	29	29	χ^2= 1.12 P = .2906 NS
	Passive Smoking	64	64	71	71	
BMI	Underweight	1	1	1	1	χ^2= 7.34 P = .0617 NS
	Normal Weight	23	23	9	9	
	Overweight	40	40	46	46	
	Obese	36	36	44	44	
Type of Family	Nuclear	37	37	39	39	χ^2= .08 P = .7708 NS
	Extended	63	63	61	61	

Non-significant at p-value > 0.05; S, significant at p-value < 0.05; HS, highly significant at p-value < 0.01

Table (1) reveals that the high percentage of both groups participant at age groups (24-34) years, (44%) in the study group and (46%) in the control group. In addition, the residency, (72%) of the study group and (82%) of the control group are urban residency. Concerning the level of education, (43%) of the study group and (26%) of the control group are illiterate. Regarding the occupation status, the study sample is (92%) in study group and (89%) in control group are housewife. Regarding the monthly income, the highest percentage is (44%) of the sample in study group are barely sufficient, and (50%) of the control group are sufficient. In addition, the table shows that the high percentages of participants are (64%) in study group and (71%) in control group are passive smokers. The body mass index of the study sample are (40%) in study group and (46%) in control group are overweight. Regarding the type of family, (63%) of the study group and (61%) of the control group are extended family.

Table (2): Statistical distribution and difference between Study and control groups according to reproductive characteristics

Reproductive Items	Sub-groups	Study Group		Control Group		Chi-Square P-value
		Freq.	%	Freq.	%	
Age at Marriage	= < 20	78	78	71	71	χ^2= 1.29
	> 20	22	22	29	29	P = 0.25
Number of gravity	= < 4	73	73	74	74	χ^2= 0.03
	> 4	27	27	26	26	P = 0.87
Number of parity	= < 4	80	80	78	78	χ^2= 0.12
	> 4	20	20	22	22	P = 0.72
Number of still birth	0	71	71	66	66	χ^2= 1.48
	1	20	20	27	27	P = 0.47
	> 1	9	9	7	7	
Number of abortion	0	70	70	57	57	χ^2= 4.51
	1	16	22	27	27	P = 0.10
	> 1	8	8	16	16	
Number of previous preterm labor	0	65	65	73	73	χ^2= 2.79
	1	31	31	21	21	P = 0.24
	> 1	4	4	6	6	
Number of previous LBW	0	98	98	100	100	χ^2= 2.02
	= > 1	2	2	0	0	P = 0.15
Birth interval	= < 2	83	83	81	81	χ^2= 0.14
	> 2	17	17	19	19	P = 0.71
Sexual activity	1-2 per week	76	76	58	58	χ^2= 7.33
	>2 per week	24	24	42	42	P = 0.00
Planning for pregnancy	Yes	69	69	74	74	χ^2= 0.61
	No	31	31	26	26	P = 0.43

| Mode of last delivery | NVD | 67 | 67 | 64 | 64 | χ^2 = 4.00 |
| | CS | 33 | 33 | 36 | 36 | P = 0.04 |

This table shows, that the majority of study subgroups are : age at marriage is less or equal 20 years in both study (78%) in study groups and (71%) in control groups, respectively, number of gravity less or equal 4 (73%) in study group and (74%) for the control group. Number of parity less or equal 4 (80%) is for study group, and (78%) for the control group, number of still birth , the subgroup without still birth (71%) is for study group, and (66%) for the control group, number of abortion, the subgroup without abortion (70%) is for study group, and (57%) for the control group, number of previous preterm labor , the subgroup without previous preterm labor (65%) is for study group, and (73%) for the control group, number of previous low birth weight (LBW) , the subgroup without previous LBW (98%) is for study group, and (100%) for the control group, birth interval , the subgroup equal or less than 4 years (83%) is for study group, and (81%) for the control group, sexual activity, the subgroup 1-2 per week (76%) is for study group, and (58%) for the control group, planning for pregnancy, the subgroup without planning (69%) is for study group, and (74%) for the control group, mode of last delivery, the subgroup (50%) for both normal vaginal delivery (NVD) and cesarean section (CS) for study group, and (64%) by NVD for the control group.

Table (3): Statistical distribution and difference between Study and control groups according to the past history.

| Items | Groups | Study Group | | Control Group | | Chi-Square |
		Freq.	%	Freq.	%	P-value*
Number of antenatal visit	0	30	30	1	1	χ^2 = 43.66
	1-3	31	31	70	70	
	= > 4	39	39	29	29	P = 0.00
Diabetes mellitus	Yes	14	14	7	7	χ^2 = 2.61
	No	86	86	93	93	P = 0.10
Hypertension	Yes	19	19	19	19	χ^2 = 0.00
	No	81	81	81	81	P = 1.00
Renal diseases	Yes	10	10	19	19	χ^2 = 0.00
	No	90	90	81	81	P = 1.00
Anemia	Yes	75	75	83	83	χ^2 = 1.93
	No	25	25	17	17	P = 0.16
Epilepsy	Yes	7	7	3	3	χ^2 = 1.68
	No	93	93	97	97	P = 0.19
Placenta previa	Yes	33	33	27	27	χ^2 = 0.86
	No	67	67	73	73	P = 0.35
Abruption placenta	Yes	7	7	2	2	χ^2 = 2.91

	No	93	93	98	98	P = 0.08
UTI	Yes	76	76	82	82	χ^2= 1.08
	No	24	24	18	18	P = 0.29
Premature rupture of membranes	Yes	28	28	22	22	χ^2= 0.96
	No	72	72	78	78	P = 0.32
Oligohydramnios	Yes		33	27	27	χ^2= 0.86
		33				
	No	67	67	73	73	P = 0.35
Polyhydramnios	Yes	19	19	18	18	χ^2= 0.03
	No	81	81	82	82	P = 0.85
Mal-presentation	Yes	23	23	19	19	χ^2= 0.48
	No	77	77	81	81	P = 0.48
Hyperemesis gravidarum	Yes	47	47	49	49	χ^2= 0.03
	No	53	53	51	51	P = 0.85

Table (3) shows that the number of antenatal visit of study group more or equal 4 (39%) of the study group and the number of antenatal visit of control group 1-3 (70%), regarding the study results indicate that there is no diabetes mellitus that both study and control groups (86%, 93%) respectively also for hypertension, the study results show that there is no hypertension in both study and control groups (81%) both groups. In addition both study group and control groups there is no renal diseases (90 %, 81%) respectively. Furthermore, in both study group and control groups there is anemia (75%, 83%) respectively and that both study and control groups there is no epilepsy (93%, 97%) respectively, also for placenta previa, the study results show that there is no placenta previa in both study group and control groups (67%, 73%) respectively, concerning abruption placenta, the study results show that there is no abruption placenta in both study group and control groups (93%, 98%) respectively. Also the study results indicate that both study group and control group have UTI (76%, 82%) while both study and control groups have no premature rupture membranes (72%,78%) respectively. In addition, the majority of the study group and control groups have no oligohydramnios (67%, 73%) respectively, the study results indicate that the majority of the study group and control groups have no polyhydramnios (81%, 82%) respectively, and have no mal-presentation (77%, 81%) and that the majority of the study group and control groups have no hyperemesis gravidarum (53%, 51%) respectively.

Table (4): Relationship between occurrence of preterm labor and Socio-Demographic Data

Items	Sub-groups	Chi-Square	df	P-value
Age / Years	13-23	**8.17**	**2**	**0.01** S
	24-34			
	35-45			
Residency	Rural	**10.17**	**1**	**0.00** HS
	Urban			
Levels of Education	Illiterate	**26.73**	**5**	**0.00** HS
	read and write			
	Primary school graduated			
	Intermediate school graduated			
	Secondary school graduated			
	Institute and above			
Occupation Status	Employed	**42.84**	**1**	**0.00** HS
	Housewife			
Monthly Income	Sufficient	**4.91**	**2**	**0.08** NS
	Barely Sufficient			
	insufficient			
Smoking	Active Smoking	**4.00**	**1**	**0.04** S
	Passive Smoking			
BMI	Underweight	**27.68**	**3**	**0.00** HS
	Normal Weight			
	Overweight			
	Obese			
Type of Family	Nuclear	**3.44**	**1**	**0.06** NS
	Extended			

Table (4) shows that there is a high significance between preterm labor and their (residency, levels of education, occupation status and BMI) at p-value < 0.01 and significance in relation with (age, smoking) at p-value <0.05. While there is a non-significant relationship with (monthly income, type of family).

Table (5): Relationship between occurrence of preterm labor and reproductive characteristics

Items	Sub-groups	Chi-Square	df	P-value
Age at Marriage	= < 20	17.01	1	0.00 HS
	> 20			
Number of gravity	= < 4	11.17	1	0.00 HS
	> 4			
Number of parity	= < 4	19.78	1	0.00 HS
	> 4			
Number of still birth	0	30.93	2	0.00 HS
	1			
	> 1			
Number of abortion	0	34.48	2	0.00 HS
	1			
	> 1			
Number of previous preterm labor	0	33.34	2	0.00 HS
	1			
	> 1			
Number of previous LBW	0	59.88	1	0.00 HS
	= > 1			
Birth interval	= < 2	24.44	1	0.00 HS
	> 2			
Sexual activity	1-2 per week	14.50	1	0.00 HS
	>2 per week			
Planning for pregnancy	Yes	7.49	1	0.00 HS
	No			
Mode of last delivery	NVD	.00	1	1.00 NS
	CS			

Table (5) shows that there is a high significance between preterm labor and their (age at marriage, number of gravity, number of parity, number of still birth, number of abortion, number of previous preterm labor, number of previous LBW, birth interval ,sexual activity, planning for pregnancy) at p-value < 0.01 and non-significant in relation with mode of last delivery.

Table (6): Relationship between occurrence of preterm labor and past history

Items	Groups	Chi-Square .	df	P-value*
Number of antenatal visit	0	.700	2	0.70
	1-3			
	= > 4			
Diabetes mellitus	Yes	29.78	1	0.00
	No			
Hypertension	Yes	21.26	1	0.00
	No			
Renal diseases	Yes	38.10	1	0.00
	No			
Anemia	Yes	13.33	1	0.00
	No			
Epilepsy	Yes	45.37	1	0.00
	No			
Placenta previa	Yes	5.95	1	0.00
	No			
Abruption placenta	Yes	45.37	1	0.00
	No			
UTI	Yes	14.50	1	0.01
	No			
Premature rupture of membranes	Yes	10.17	1	0.00
	No			
Oligohydramnios	Yes	5.95	1	0.01
	No			
Polyhydramnios	Yes	21.26	1	0.67
	No			
Mal-presentation	Yes	15.73	1	0.00
	No			
Hyperemesis gravidarum	Yes	0.18	1	0.00
	No			

Table (6) show that there is a high significance between preterm labor and all items, except at the items with UTI and oligohydramnios thus are significant, items with number of antenatal visit and polyhydramnios thus are non-significant.

4. DISCUSSION:

According to (Table 1, 2) in the results, the study results results of the present study show that the high percentage of both participant at age groups (24-34) years. This result matches with the result of Mahapulaet.

al., (2016) who found in his study that the majority of the study subject's age were between (18-34) years old. Also Al-Salami et. al., (2009) in their study "influence of body mass index on the incidence of preterm labor" stated that the majority of the sample age between (20-40) years old. This results may come because women in this age are more likely to be pregnant and this age group is a preferable for pregnancy, so they seeking for medical help (9,10).

Relative to the residency, the present study shows that the majority of both groups are living in urban residential area. This result agree with the result of Teimouri et. al., (2015); Mustafa et. al., (2012) they mentioned that both groups are living in urban residential area. This results may come due to women who live in urban more vulnerable to pollutants and chemicals such as; polluted air from factories, vehicles and electric generators. In addition, frequent use of detergents, cosmetic and pesticides (11, 12).

In addition, the level of education, the present study indicates that the highest percentage of both groups are illiterate. These results are in agreement with Nigeenet. al., (2015); Al Asadiet. al., (2013) in their study, they mentioned that there is high percentage of study sample are illiterate. Also supported by Lallar, et al. (2014) they found that the majority of study sample are illiterate (13,14,15).

Concerning to occupation, the most of study group and control groups were housewife. This result came along with Qiu, et al., (2014); Sadat et al., (2012) in their study that the majority of study sample are housewife (16,17).

Concerning to monthly income, the highest percentage of study group are barely sufficient. This result agrees with Shaikh et al., (2011) in their study they mentioned that the majority of study group are barely sufficient. While the majority of control group are sufficient which disagree with Teimouriet. al., (2015) in their study which indicated that the majority of control groups are with sufficient (11,18).

Regarding passive smoking, the majority of study and control groups are exposed to passive smoking .This result agrees with Mahapula, et. al., (2016) they reported that high percentage of case and control group are passive smokers (12).

Concerning to body mass index, the highest percentage of study group are overweight. This result agrees with Cnattingius, et. al., (2013) in their study they mentioned that the majority of study group are overweight (19).

Regarding type of family, the majority of study and control groups are exposed to extended .This result agrees with Lopez &Breart (2013) they reported that high percentage of case and control group are extended (20).

Relative to the age of marriage, high percentage of both study and control groups are equal or less than 20 years. This result supported by Miranda, et al. (2012) in

their study, which indicated that the highest percentage of both groups have equal, or more 15 years (21).

About number of gravity, the majority of the sample in both study and control groups are equal or less than four. These results come along with Alijahan, et al. (2014) in their study "Prevalence and risk factors associated with preterm birth in Ardabil, Iran" in their study which indicated that the highest percentage of both groups have multi gravid (22).

Relative to the number of parity, high percentage of both study and control groups are equal or less than four. This result agrees with Van Den Broek, et al. (2014) in their study, which indicated that the highest percentage of study sample are (parity 1–4). In addition, the study results show that in the majority of both groups there is no stillbirth. This result agrees with Do Carmo Leal, et al. (2016) in their study they stated that " Prevalence and risk factors related to preterm birth in Brazil' which indicated that the highest percentage of both groups have no stillbirth (3,23).

The present study shows that the majority of study sample have no abortion and previous preterm labor. This result supported by Mahapula et al., (2016); Shaikh, et al., (2011), in their study which indicated that the highest percentage of study sample have no abortion and previous preterm labor. In related to the study results show that the majority of both groups there is no previous low birth weight. This result comes along with Dodd et al., (2008); Alijahan(2014) in their study that the majority of study sample there is no previous low birth weight (1,18,22,24).

The present study shows that the majority of study sample have birth interval less or equal two. This result supported by Alijahan, et al., (2014), in their study which indicated that the highest percentage of study sample have birth interval (22).

Regarding planning for pregnancy, the present study shows that the majority of study sample have planning. This result agree with Mahapula, et. al., (2016) in their study " Risk factors associated with pre-term birth in Dar es Salaam, Tanzania: a case-control study" they mentioned that the majority of study sample are planning for pregnancy (1).

Relative to mode of last delivery, the study result shows that the highest percentage of study sample are normal vaginal delivery, these results agree with Field, et al. (2016) they mentioned that the majority of study sample was normal vaginal delivery (25).

According to (Table 3) in the results, The present study show that the majority of both study groups are with no past medical history (DM, HTN, renal diseases and epilepsy) except few number of both study have anemia. This result comes along with El Beltagy, et al. (2016) they mentioned that the majority of study and control group are with no past medical history except of both study have anemia (26).

In addition, the present study shows that the majority of study group have no complication during present pregnancy except UTI, which in consistency with Alijahan, et al. (2014); Al-Dabbagh and Al-Taee (2006) in their study they mentioned that most of study sample had no complication during present pregnancy (22,27).

According to (Table 4, 5, 6) in the results, the present study result related to associations between preterm labor and socio-demographical data in (Table 4). The present study reveals that there is a high significant association between preterm labor and demographic data of study group in relation to (residency, levels of education, occupation status and BMI). In addition, significance in relation with (age, smoking). The results of the present study agree with other studies that indicated significant associations between demographic data and preterm labor (Rey, et al. (2014); Al-Dabbagh and Al-Taee, 2006). While there is a non-significant relationship with (monthly income and type of family). This result comes along with Shaikh, et al., (2011) in their study; they found that the monthly income and type of family have no association with preterm labor (18,27,28).

The present study result in table (5) reveals that there is high significant association between preterm labor and reproductive characteristics of study group in related to (age at marriage, gravity, parity, still birth, abortion, previous preterm labor, LBW, birth interval ,sexual activity, planning for pregnancy). This result agrees with El Beltagy, et al. (2016); Ashraf-Ganjoei, et al. (2011) they mentioned in their study that, there is a relationship between preterm labor and reproductive characteristics (26,29).

Relative to the reproductive characteristics, no relationship between study group regarding mode of last delivery and preterm labor that comes along with Alijahan, et al. (2014) in their study reported there is no relationship between mode of last delivery and preterm labor (22).

In addition, to the study result relationship between occurrence of preterm labor and past history, the present study shows that no significant differences between antenatal visit and preterm labor. This result comes along with Rey, et al. (2012) in their study, they found that the antenatal visit have no association with preterm labor (28).

The present study reveals that there is high significant association between preterm labor and past history of study group in related to (DM, hypertension, renal disease, anemia, placenta previa, abruption placenta, premature rupture of membranes, mal-presentation, hyperemesis gravidarum, oligohydramniosand UTI). The results of the present study are supported by other studies that indicated significant association between past history and preterm labor (Oliveira, et al. (2016); El Beltagy, et al. (2016); Alijahan, et al. (2014)). While with polyhydramnios is non-significant which agrees with Kiran, et al. (2010) in

their study they mentioned that no relationship between polyhydramnios and preterm labor (22,26,30,31).

5. CONCLUSIONS:

The women from urban residential areas are more risky for preterm labor as compared with rural residents. Early age of marriage are high risk for preterm labor. Past medical history are contributing factors to preterm labor.

6. RECOMMENDATIONS:

Based on the study conclusion, the study recommends the following:

1- Improving programs of health education and communication regarding pregnant women with prenatal and postnatal periods as early as possible.
2- Using different type of mass media to stimulate public awareness about the risk factors of preterm labor.
3- 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.
4- Emphasize on prenatal care as early as possible and improving health care services presented to the mother during pregnancy that the nurse must take the role in reducing the preterm labor.

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