Impact of maternal risk factors on the outcome of pregnancy in Baghdad city

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Abstract:

To find out the impact of maternal risk factors on the outcome of pregnancy in Baghdad city. A descriptive purposive study was carried out on 100 postpartum women who had delivered for 1 hr. to 24 hrs. ago . the study sample was selected from three hospitals in Baghdad city (Baghdad teaching hospital ,Fatima Al-Zahra'a maternity and pediatric teaching hospital and Al-Yarmook teaching hospital),during the period from 25 Jan. to 25 Feb. 2006. The data were collected through the use of questionnaire format reviewing pregnants' records and personal interview and were analyzed by using descriptive and inferential statistical approaches. The finding revealed that maternal pregnancy complications had weak effects on pregnancy outcome , while maternal employment & spouse's consanguinity were predictors for poor pregnancy outcome . The study recommended the necessity of establishing health education programs for pregnant to be self monitoring & early detection of complications that associate the pregnancy . In addition promote the system of follow up care during antenatal ,perinatal,& postnatal.

Key words: Maternal risk factors, Pregnancy, Outcome.

Introduction:

Pregnancy is an event in a woman's life which many physiological, physical,& psychological changes occur[1].

Most women will progress through pregnancy in an uncomplicated fashion & deliver a healthy infant requiring little medical or midwifery intervention . Unfortunately, a significant number of women ,for reasons that usually are unclear , unexpected complication or deviation from the course of normal pregnancy may occurs. When this happen can place a sever burden on the women and their families[2].

Many factors have been used to screen pregnant women who are at risk and may have poor outcome, these include , genetic factors, demographic &psychosocial factors , medical problems ,obstetric factors ,nutritional factors , toxic exposure, and prenatal care [3].

Many experts consider that many of problems that appear during pregnancy can be detected during regular antenatal care and education [1,3].

So the antenatal period is considered one of the best time for such teaching which is a major component of the professional nurse's role. So greater emphasis must be placed on helping the mother & her family to fully understand the body process & rational for medical & nursing management of health problem[4].

Educating the women about the risk factors & management will lead to minimize the obstetrical complications associated with pregnancy & for safety of mothers , then delivery of a live mature newborn that will not require intensive & prolonged neonate care [4,5].

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Materials and methods:

A descriptive, purposive study was carried out on (100) postpartum women who had delivered for 1hr to 24hrs ago. The study sample was selected from three hospitals [Baghdad teaching hospital, Fatima Al-Zahraa Maternity & Pediatric teaching hospital and Al-Yarmook teaching hospital],during the period from 25 Jan. to 25 Feb. 2006. For the purpose of the study an interview questionnaire format was designed from literature review and previous studies, it's validity was secured by panel of experts. It included four parts, first part is concerning the socio-demographic data of the sample, second part is reproductive data, the third part is complications during current pregnancy and the forth part is pregnancy outcome (neonatal) data.

Data were analyzed by frequency distribution, percentages, contingency coefficient, Chi Square, and step-wise multiple regression to achieve the aims of the study.

Result:

Table(1) distribution of mothers according to their sociodemographic characteristics.

sociodemographic characteristics	F	%
Mother's age (years)		
≤ 20	12	12
21-25	31	31
26-30	28	28
31-35	18	18
36-40	9	9
≥ 41	2	2
Total	100	100
Educational level		
Unable to read and write	9	9
Primary school graduate	48	48
Secondary school graduate	29	29
Institute/University and over	14	14
Total	100	100
Employment		
House wife (Unemployed)	89	89
Employed	11	11
Total	100	100
Residency		
Urban	82	82
Rural	18	18
Total	100	100
Socioeconomic status		
Low	65	65
Middle	28	28
High	7	7
Total	100	100

Table (1) indicated that most of the mothers (31%) were in age group (21-25) years, (48%) were primary school graduate, (89%) were unemployed (housewives), (82%) were from urban area, and (65%) were of low socioeconomic status.

Table (2) Distribution of Mothers according to their reproductive characteristics.

Reproductive characteristics	F	%
Gravidity		
1	29	29
2-4	54	54
5 (and over)	17	17
Total	100	100
Parity		
1	36	36
2-4	52	52
5 (and over)	12	12
Total	100	100
Abortion		
No	71	71
Yes	29	29
Total	100	100
Still birth		
No	97	97
Yes	3	3
Total	100	100
Mode of previous delivery		
Primi para	29	29
NVD	24	24
C/S	47	47
Total	100	100
Interval between last and present pregnancy		
Primi gravida	29	29
< 2 years	49	49
≥ 2 years	22	22
Total	100	100
Type of infertility		
Primary	3	3
Secondary	1	1
None	96	96
Total	100	100
Antenatal visit		
Regular	72	72
Irregular	21	21
None	7	7
Total	100	100
Spouse's consanguinity		
Related to husband	48	48
Not related to husband	52	52
Total	100	100

Results of table (2) had depicted that (54%) of mothers had gravida ranged from (2-4) and (52%) had (2-4)deliveries too, (29%) of them had previous abortion, and (3%) had still birth. In regard to the mode of previous delivery most of them (47%) had previous C/S, 4% had infertility. Regarding antenatal visits (72%) had regular visits, and more than half (52%) of women married with relatives.

Table (3) distribution of mothers according to the complications during current pregnancy.

Incidence of complications	F	%
Yes	97	97
No	3	3
Total	100	100
Types of complications		
Anemia	69	69
Urinary tract infection (UTI)	41	41
Pregnancy induced hypertention (PIH)	30	30
Oligohydramnios	14	14
Polyhydramnios	11	11
Rh Incompatibility	10	10
Gestational diabetes mellitus (G.DM)	9	9
Multiple pregnancy	9	9
Ante partum hemorrhage (APH)	6	6
Asthma	3	3
Cardiac problems	3	3

Results of table (3) indicated that the majority of women 97% experienced such complications during their current pregnancy which include: anemia (69%), urinary tract infection (41%), pregnancy induced hypertention (30%), oligohydramnios (14%), polyhydramnios (11%), Rh-incompatibility (10%), gestational diabetes mellitus (9%), multiple pregnancy (9%), ante partum hemorrhage (6%), asthma (3%), and cardiac problems (3%) too.

Table (4) Neonatal characteristics of the study group.

Variables	F	%
Gestational age		
≤ 37 wks	18	18
38-42 wks	77	77
> 42 wks	5	5
Total	100	100
Mode of present delivery		
NVD	31	31
C/S	69	69
Total	100	100
Weight		
< 2500 gm	26	26
2500 gm – 4000 gm	72	72
> 4000 gm	2	2
Total	100	100
Apgar score during (1-5 minute)		
≤ 6	23	23
≥ 7	77	77
Total	100	100

Results of table (4) indicated that the majority of neonates 77% were full term (38-42) weeks gestation, 69% delivered by C/S, 72% weighed (2500 – 4000)gm. ,and 77% scored (≥ 7) during the first and fifth minutes of their lives.

Table (5) distribution of Neonates birth weights and apgar scores according to maternal complications during current pregnancy.

Maternal complications	F	BIRTH WEIGHT						Apgar scores			
		<2500 gm		2500-4000gm		> 4000gm		≥7		≤ 6	
		F	%	F	%	F	%	F	%	F	%
Anemia	69	18	26.1	50	72.5	1	1.4	52	75.4	17	24.6
UTI	41	18	43.9	21	51.2	2	4.9	30	73.2	11	26.8
PIH	30	12	40.0	17	56.7	1	3.3	22	73.3	8	26.7
Oligohydramnios	14	7	50.0	6	42.9	1	7.1	8	57.1	6	42.9
Polyhydramnios	11	2	18.2	8	72.4	1	9.1	6	54.5	5	45.5
Rh. Incompatible	10	4	40.0	6	60.0	-	-	7	70.0	3	30.0
Gestational D.M	9	2	22.2	4	44.5	3	33.3	4	44.4	5	55.6
Multiple pregnancy	9	8	88.9	1	11.1	-	-	4	44.4	5	55.6
Antepartum hemorrhage	6	2	33.3	4	66.7	-	-	4	66.7	2	33.3
Asthma	3	2	66.7	1	33.3	-	-	2	66.7	1	33.3
Cardiac problems	3	2	66.7	1	33.3	-	-	1	33.3	2	66.7

C1=0.3938607 (Relationship between maternal complications and birth weights).

C2=0.2188049(Relationship between maternal complications and apgar scores).

Results of table (5) indicated that most neonates their birth weights were with in normal range (2500-4000)gm, as well as their apgar score were good (7 or more). The effect of maternal complications on the outcome of pregnancy, the study finding indicated that there is a weak relationship between maternal complications during their current pregnancy with their outcomes.

Table (6). Stepwise multiple regression analysis between neonate characteristics and independent variables.

Independent variables	B	t	P.value
Age	-090	-918	-361
Educational level	-052	-539	-561
Employment	-204	2.139	-035*
Residency	-112	1.132	-260
Socioeconomic status	-58	896	-553
Gravidity	-081	-822	-413
Parity	-016	-168	-867
Abortion	-069	-704	-483
Still birth	-036	-369	-713
Mode of previous delivery	-085	-860	-392
Interval between pregnancies	-035	-356	-723
Antenatal visits	-040	-414	-680
Spouse's consanguinity	-198	2.080	-040*
Gestational age	-069	-684	-496
Mode of present delivery	-087	-888	-377

Statistically significant at $p<0.05$

Multiple R = 0.80 R2 = 0.69

F=2.48 $p<0.005$

Result of table (6) presented the variables which were significant predictors for poor pregnancy outcome were maternal employment and spouse consanguinity.

Discussion:

Sociodemografic characteristics:-

Table(1) reveled that most women (31%) their ages ranged between (21-25) years . this finding of such age was an appropriate one for reproduction. Supportive evidence reported that this age group may considered non-risk group and may not experience such problem during pregnancy, while mother whose age less than (20)years or as(35)years and older likely to give poor outcomes Both early and late childbearing are associated with higher rates of preterm birth, growth restriction and perinatal mortality. Older mothers have a higher prevalence of pregnancy complications e.g. congenital anomalies, PIH, D.M, multiple pregnancy, more maternal mortality & morbidity and more often delivered by C.S [6].

Concerning women's education , most of them (48%) were accounted for primary school graduate . Maternal education may affect on their health awareness & attitudes. More educated women closely associated with better reproductive behaviors & more responsible for child rearing. Educational level is well correlated with perinatal outcome[7].

With respect to women's occupation , the majority (89%) were housewives. The association between occupation& adverse pregnancy outcome was reported among women who were engaged in hard physical work & fatigue either in home or outside home (work place) [8].

Regarding women's socioeconomic status , the results indicated that most of them (65%) were from low socioeconomic class, it had been reported that mothers in upper socioeconomic class had fewer pregnancy poor outcome than those in the lower class whom had lack of knowledge & poor skills related to health [7]..

Consanguinity marriage involved (48%) of study group . the present study revealed that consanguinity is significant predictor for poor outcome ($P<0.05$) table(6). It was reported that

birth weight of newborn for consanguinity couple was significantly lower than that of no consanguinity couple[9].

Reproductive characteristics:

Table (2) presented that more than half of mothers (54%) had 2-4 gravida ,(52%) had 2-4 para respectively ,(71%) had no abortion ,and the majority(97%) had no previous stillbirth. Supportive and consistent evidence reported that this group was less risky more risks develop with gravidity and parity of five and more and the risk increased with history of abortion , still birth in addition the risk of maternal mortality increased for each successive birth after the 4^{th} pregnancy ,the risk is (1.5-3) times for women with five & more children than those with two or three children. [10].

Mode of previous delivery for (47%) of women was cesarean section and the same mode for their present delivery which account (69%) of women . The present finding showed no such effects of cesarean section on maternal and fetal health status , which was inconsistent with what had been reported that any condition affect the health of the women during pregnancy , labor, and delivery put the pregnant women in high risk group [2].

Concerning interval between last and present pregnancies , nearly half of women (49%) had short intervals (less than 2 years). This finding showed no such effects on maternal outcome . One study reported that the interval between pregnancies whether short or long didn't significantly increase the risk of poor outcome [11].

While others reported that both short and long interval had been found to increase the risk of various adverse effects on maternal outcome.Others reported that the shorter interval between births is the higher the infant morbidity and mortality [12]. The vast majority of the study group (96%) had no history of infertility . Most studies showed that they is a significant association between infertility & increasing risk of poor outcome [13].

Antenatal care during pregnancy , the majority of women (72%) of women visited antenatal care clinics regularly. This finding indicated that mother's awareness toward the importance of seeking antinatal care had improved .Some studies reported that there is a difference in the pregnancy outcome between women who had regular & adequate antenatal care and those who had irregular antenatal care or had no at all [4,14].

complications during current pregnancy :-

Study finding in table (3) showed that the vast group (97%)had experienced complication during their present pregnancy which were ;-

Iron deficiency , anemia that involve most of the group (69%) ,WHO reported that anemia during pregnancy associated with increased risk of maternal and fetal morbidity & mortality [14].

Other reported that iron deficiency anemia associated with low fetal weight& preterm birth [15].

41% of women had complained urinary tract infection (UTI).It is a symptomatic bacteriuria occurs in 2-5% of pregnant women and when untreated is associated with pyelonephritis and preterm labor. Early detection & appropriate treatment will reduce the risk of preterm birth [2].

30% of women experienced pregnancy induce hypertension (PIH) .This is the most high risk factor which affects on pregnant & fetal health status. It occurs in 2-10% of pregnancies and it is associated with both maternal and neonatal morbidity and mortality [16].

(14%) of women had olighydaromnios .This associated with

fetal distress & preterm labor [3]..11% of women had polyhydramnios .this considered a high risk factor which lead to premature rupture of membrane, infection , fetal malpresentation & distress and cord prolapsed[15].

10% of women experienced RH. Isioimunization this problem associated with several neonatal disorders [2]. (9%) of women had gestational diabetes which considered high risk that affect maternal & fetal health status . Studies reported that mother with gestational diabetes had increased risk for pre-eclampsia , bacterial infection , macrosomia ,hydromnios ,operating delivery , & increase neonate mortality [14,15].

(9%) of women had multiple pregnancy, this associated with higher rate of premature birth, immature newborn ,& poor fetal survival, the mothers are more susceptible to pregnancy complication such as PIH ,hydramnios, placenta previa, and anemia [17,18].

(6%)of women involved by ante partum hemorrhage, Vaginal bleeding is a deviation from the normal that may occur at any time during pregnancy. It is one of the serious leading causes of maternal death & it a risk factor associated with poor outcome [15]. (3%) of women had cardiac problems which is considered a risk factor that cause fetal congenital heart , fetal distress ,low birth weight , preterme labor & abortion [19].

Results of table (4) showed that most neonates (72%) their birth weights were within normal rang (2500-4000gm),(77%) were full-term (38-42)weeks of gestation,(77%) too were in a good health status as indicated by apgar score (>7) during the first & fifth minutes of life .

To study the impact of maternal pregnancy complications on neonate's health, chi square & coefficiencey contingency. revealed that there is a weak relationship between maternal complications during current pregnancy with their outcome (table5) the explanation for this finding may be related to increased maternal health awareness and to seek medical care, most of them (72%) were regular attendance for prenatal care clinics where render appropriate antenatal care, early detection & screening for pregnancy complications & other risk factors as well as continuous monitoring & follow up care. It had been reported that changes in maternal health & obstetrical practices have resulted in a 70% decline in the rate of fetal death among pregnant women of all ages since 1960s. [19].WHO (2001) commissioned a study of how effective ANC was improving maternal health through early detection, prevention, as well as treatment of maternal & obstetrical complications during pregnancy[4].

On other hand table(6) revealed that maternal employment & spouse's consanguinity were statistically significant predictors for poor pregnancy out comes at ($p<0.05$) this finding consistent with what had been reported that the longer a women works beyond 28 weeks of pregnancy, the lower her baby's birth weight may be. Other problem occur with employment include interference in maternal adequate rest &nutrition [8,15].

Recommendations:

The study recommends the necessity of establishing teaching program to the pregnant women to be self monitoring for the purpose of early detection of any problems during antenatal period and to seek medical and nursing care to save their pregnancy, as well as improving follow-up care system through the primary health care centers for the purpose of increasing the

maternal awareness about their health status during antenatal , intranatal , and postnatal period.

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تأثير عوامل الخطورة للام على ناتج الحمل

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الخلاصة:

ايجاد تأثير عوامل الخطورة عند الأم الحامل على ناتج الحمل في مدينة بغداد. دراسة وصفية غرضية أجريت على 100 امرأة قد وضعن حملهن ما قبل 1ساعة الى24ساعة مضت. تم اختيار عينة الدراسة من ثلاث مستشفيات في مدينة بغداد (مستشفى بغداد التعليمي ,مستشفى فاطمة الزهراء للولادة والأطفال التعليمي ,ومستشفى اليرموك التعليمي) خلال الفترة من 25 كانون الثاني الى 25 شباط 2006. تم جمع البيانات باستخدام الاستمارة الاستبيانية والمقابلة الشخصية وتحليل البيانات باستخدام الاحصاء الوصفي والاستنتاجي.

أظهرت النتائج أن مضاعفات الحمل لها تأثير ضعيف على ناتج الحمل بينما يتنبأ عمل الأم ودرجة القرابة مع الزوج بناتج حمل ضعيف. أوصت الدراسة بضرورة بناء برامج صحية تثقيفية للحوامل وتوعيتهن بالكشف المبكر لعوامل الخطورة والمضاعفات التي ترافق الحمل .اضافة الى تطوير نظام المتابعة والرعاية الصحية لهن خلال الحمل ,الولادة ,وما بعد الولادة.