Original Research Article

Assessment of Knowledge Regarding Risk Factors Leading to Miscarriages among Pregnant Women in Balochistan

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Abstract

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The aim of this study was to assess the knowledge of pregnant women in Balochistan regarding risk factors leading to miscarriages. A self-designed interview-based study was conducted on 376 pregnant patients attending the tertiary care hospitals of Quetta, particularly Bolan Medical Complex Hospital and Civil Hospital Quetta. The data collected on questionnaires was analyzed on SPSS version 20. Majority of the participants said that they knew about miscarriage. Most of them agreed that thickness of blood, diabetes, heredity reasons, uterus disorders, lack of folic acid, frequent pregnancies, multiple pregnancies, drugs during pregnancy and history of miscarriages can lead to miscarriage in mother. However, majority of the participants disagreed with the fact that thyroid disorders, age above 35 and tobacco consumption leads to miscarriage. The study indicates average knowledge in pregnant females in Quetta. Thyroid disorders, age above 35, tobacco smoking, deficiency of folic acid and blood disorders can in fact lead to miscarriages. However, most of the participants did not know about this. Hence, it is strongly recommended that awareness must be created among the community towards the risk factors regarding miscarriages.

Keywords: Obstetrics, Pregnancy, Miscarriages, Abortion, Female Health, Balochistan, Quetta, Pakistan

INTRODUCTION

Miscarriage also known as 'spontaneous abortion is defined as loss of pregnancy before the 20th week of gestation or expulsion of embryo/fetus weighing 500g or less (Stirrat, 1990). It can also be defined as a pregnancy that ends up before fetus has reached a viable gestation age. This definition equally equates both clinically and legally to a human pregnancy that ends before 24 weeks of gestation (Regan and Rai, 2000). Spontaneous miscarriages occur in 15 to 20 percent of pregnancies but the actual figure from community-based assessment may be up to 30% as many cases in the hospitals remain unreported. The majority of miscarriages occurs in 12 week, whereas less than 3% cases occur between 12 to

24 week (Topping and Farquarson, 2008).

Studies reveal that there are many risk factors that can lead to miscarriage like thyroid related disorders, age, reproductive problems, blood disorders, smoking and nutritional deficiency such as low folic acid levels (Hooker et al., 2014). Thyroid related disorder concerned with miscarriage was hypothyroidism, a condition in which thyroid activity reduces. Thus, causing thyroid hormones deficiency. Hypothyroidism is associated with infertility and higher risk of miscarriage (Prummel and Wiersinga, 2004). At times of pregnancy demand of thyroid hormones increases. It was found that rate of miscarriage in hypothyroid patients reduced from 38-48%

to 0% when they were given adequate T4 substitution. Age can be also another reason for miscarriage. According to a research conducted in Asia it was found that females with age equal to or greater than 34 years are more likely to miscarry compared to that of 20 to 30 years of age (Kouk et al., 2013). Women of age 25-29 have 10.7% rate of miscarriage while this rate increases to 14.2% for age 35-39 years and even more higher up to 26.2% for age 35-39% (Nambiar et al., 2011). Another cause of miscarriage is Intrauterine adhesions (IUA) and other related or homogenous uterine disorders. Any kind of reproductive ailment can be dominantly related to miscarriage or even inability to conceive sometimes. Partial or complete obliteration of the uterine cavity by adherence of the uterine walls that lead to menstrual abnormalities like amenorrhea or hypo menorrhea in some cases infertility and even habitual abortion, has been termed Asher man's syndrome or intrauterine adhesions (IUA) (Wallach et al., 1982). Prevalence of IUA is found to be 22.4%, it is also an outcome of miscarriage most commonly seen in frequent miscarriages (Hooker et al., 2014). Moreover, the recurrent miscarriage is linked to the elevation in the levels of phospholipids antibodies, in about 15% of women. The women showing positive result of phospholipids antibody have a rate of fetal loss up to 90%. Thus, this is another reason that recurrent miscarriages can put women at risk of abortion. Lupus anticoagulant and cardiolipin antibodies are also associated with recurrent miscarriages (Rai et al., 1997). Another influential factor that can lead to reproductive illness and higher risk of miscarriage is smoking. There is up to 39% chances of spontaneous abortion that may be due to smoking alone (Roth and Taylor, 2001). Women who smoke are at higher risk of miscarriage than women who do not. Smokers are also found to have disturbed menstrual cycles, severe period pain, irregular and heavy period flow (Mishra et al., 2000). Folic acid is a synthetic compound and found naturally referred to as folate vitamin and is found in liver, kidney, beans and many vegetables. It is required for the maturation of Nervous system in fetus and its deficiency leads to maturation disorders resulting in both serious and mild complications, the serious complications including anencephaly and spina bifida while the mild complications are meningocele, meningomyelocele. The serious complications have higher chances of miscarriage. Artificially synthesized folic acid supplements are given to all pregnant ladies which counter the deficiency and prevents the issue related to Folate deficiency (Folic acid in pregnancy, 1968).
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Miscarriage has been classified into three types

1) Biochemical loss is a spontaneous miscarriage that occurs before 6 weeks of gestation when fetal heart activity has not developed yet. Ultrasound findings are unknown location? whereas beta HCG level lowers then falls.

2) Early pregnancy loss occurs about in 6 to 8 weeks of gestation where heart beat cannot be found. Ultrasound findings are empty sac whereas beta HCG shows an initiation rise and then falls.

3) Late pregnancy loss occurs as late as after 10 weeks of gestation when fetal heart activity is lost. Principal ultrasound findings are the detection crown rump length and identification of cardiac activity while beta HCG level rises initially then comes to a static level or starts to fall (Keith and Farquarson, 2008).

Diagnosis of miscarriage can be made by three techniques; on basis of ultrasound, the level of serum beta human chorionic gonadotrophin (B- HCG) and by description of gestational age at the time of pregnancy loss. Ultrasound can be either Transabdominal or Transvaginal. Best initial step in diagnosis is always Transabdominal
Ultrasound but it has limitations therefore, it cannot be entitled as a dependent diagnostic tool for detection of miscarriage. Transvaginal Ultrasound has been found to be very practical source of diagnosis. In some cases where gestational sac is not visible, transvaginal ultrasound is repeated after a week along with measurement of Beta HCG levels (Topping and Farquarson, 2008).

Another important clinical aspect of miscarriages is their management when complications come along the way. It has been seen that 74% of non-viable miscarriages occur successfully without intervention but when expulsion of baby is incomplete or retained products are to be removed then different ways of management become important. The methods of management include expectant management, medical management and surgical evacuation. Expectant managementoffers a treatment that results in abortion of retained tissue without any treatment. Efficiency of this method is good when patient has stable vitals. Data from research suggests that expectant management is treatment of choice for miscarriage and valid option for management of incomplete and complete miscarriage. Medical treatment is found to be an effective way of managing miscarriage. The principle of medical treatment is the usage of medicines which induces uterine contractions that leads to expulsion of fetus. It involves misoprostol (prostaglandin E1 analogue) and mifepristone (progesterone antagonist). Surgical management was the standard treatment offered until 19th century by the Gynecologists. It was assumed that retained tissue can increase the risk of infection as well as hemorrhage. However, this procedure was introduced at the time when retained tissue increased the risk of infection coupled with high mortality rate due to the reason that there was increased rateof illegal pregnancy termination and most importantly absence of antibiotics. This made surgical evacuation method of choice for

miscarriage management. It is also treatment of choice even today when bleeding is excessive or infected tissue is retained. Still many women go for it as it leads to immediate termination of pregnancy. For surgical evacuation suction curettage method has been found more suitable as it is associated with lesser complications. But sometimes serious complications such as uterine perforations, intrauterine adhesions, cervical tears and hemorrhage may occur while choosing surgical evacuation as an option of treatment. Patients who miscarry should be counseled, as emotional stability is an important factor while dealing any medical case. Patient should also seek medical advice and complete evaluation as to the cause of miscarriage (Topping and Farquarson, 2008).

The objective of this study was assessing the knowledge regarding risk factors leading to miscarriage among pregnant women of Quetta, Pakistan and to prevent people from calamitous outcomes by taking useful measures to avoid miscarriages. This research was conducted to find that whether people know about the mentioned risk factors and if they have the knowledge regarding them then either they know their consequences and complications or not.

METHODOLOGY

Study setting

This study has been conducted in two tertiary hospitals of Quetta. The Hospitals are Bolan Medical Complex Hospital and Civil

Study design

An interview-based quantitative study was conducted on 376 the pregnant patients attending the tertiary care Hospitals of Quetta, namely Bolan Medical Complex Hospital and Civil hospital Quetta.

Study duration

This study was conducted over a period of 6 months (20th May 2017 - 26 Oct 2018) from its first discussion to its thesis. The data was collected over a period of 3 months.

Study Population

376 patients participated in this study. The data was collected from pregnant women of different ages attending OPDs at Bolan Medical Complex Hospital and Civil hospital Quetta.

Study tool

The study was conducted by a self-designed questionnaire, which contained 14 questions to judge the knowledge of the patients.

Data analysis

The data was analyzed on SPSS version 20.

RESULTS

Demographic characteristics

Table 1 shows all the demographic characteristics. Majority of participants 40(46.7%) belong to age group 26-40. Majority of them 237(67.5%) were married for 1-10 year of duration. Most of the participants 281 (80.1%) had number of children in range of 1-5. The participants (83.3%) who took part in study belonged to Quetta. Majority of the participants 261(74.4%) had already visited hospital meaning it was not their first visit. Majority of participants in the survey were illiterate 169 (48.1%).

Questionnaire response

Table 2 shows questionnaire response in which Majority of the participants 324(92.3%) said that knew about miscarriages. Most of them 217(61.8%) agreed that thickness of blood causes miscarriages in mother. Majority of the participants 228 (65.0%) believed that diabetes may cause miscarriage. About 178(50.7%) agreed that reason of miscarriage is heredity. Majority of the participants 108(30.8%) disagreed with the fact that thyroid disorder may lead to miscarriages. Majority of the participants 294 (83.8%) believed that uterus disorder leads to miscarriage. Most of the participants 284(80.9) knew that folic acid deficiency may cause miscarriages in mother. 151 (43.0%) believed that 35 or more age cannot cause miscarriages. About190(54.1%) agreed that frequent pregnancies may cause miscarriage. Most of them 154 (43.9) also believed that there is danger of miscarriage in multiple pregnancy. 229(65.2%) agreed that miscarriage may happen if the mother is taking some drug There were 174 (49.6) who disagreed with question that smoking tobacco may cause miscarriages and 213 (60.7%) believed that a previous miscarriage may be the reason of next miscarriage.

Comparison of mean and significance:

Table 3 shows highlights the comparisons of mean and

Table 1. Demographic frequency

Demographic	*Frequency*	*Percent*
Age group		
10-25	156	44.4
26-40	164	46.7
41-55	30	8.5
56-70	1	.3
Duration of marriage group		
1-10	237	67.5
11-20	64	18.2
21-30	40	11.4
31-40	10	2.8
Number of children group		
1-5	281	80.1
6-10	59	16.8
11-15	11	3.1
Address		
Abbottabad	1	0.3
Barkhan	1	0.3
Bhaghnari	1	0.3
Chaman	3	0.9
Dera Allah Yar	1	0.3
Faisal Abad	2	0.6
Karachi	1	0.3
Khanozai	2	0.6
Kuchlak	6	1.7
Khuzdar	3	0.9
kohlu	1	0.3
Loralai	3	0.9
Musakhel	1	0.3
Mustung	6	1.7
Naseerabad	1	0.3
Noushki	3	0.9
Panjgur	2	0.6
Pishin	13	3.7
Quetta	294	83.8
Turbat	1	0.3
Wahshuk	1	0.3
Zhob	2	0.6
Ziarat	2	0.6
Hospital visit		
1st time	90	25.6
Already visited	261	74.4
Education		
Illiterate	169	48.1
Primary	37	10.5
Middle	32	9.1
Matric	38	10.8
College	44	12.5
University	31	8.8

Table 2. Questionnaire frequency

S no	Questionnaire	Yes N (%)	No N (%)	Don't know N (%)
1	Do you know about miscarriage?	324(92.3%)	19(5.4%)	8(2.3%)
2	Is the thickness of blood in mother, is a cause of miscarriage?	217(61.8%%)	55(15.7%)	79(22.5%)
3	Can diabetes lead to miscarriage?	228(65.0%)	67(19.1%)	56(16.0%)
4	Do you think reason of miscarriages is mainly hereditary?	178(50.7%)	100(28.5%)	73(20.8%)

Table 2. Continue

5	Do you think thyroid disorder leads to miscarriage?	97(27.6%)	108(30.8%)	146(41.6%)
6	Can uterus disorder lead to miscarriage?	294(83.8%)	18(5.1%)	39(11.1%)
7	Can folic acid deficiency lead to miscarriage?	284(80.9%)	44(12.5%)	23(6.6%)
8	If the age of the mother is 35 or more, there is more chances of miscarriage?	126(35.9%)	151(43.0%)	74(21.1%)
9	Can frequent pregnancies lead to miscarriage?	190(54.1%)	105(29.9%)	55(15.7%)
10	Can there be risks of miscarriage in multiple pregnancies?	154(43.9%)	133(37.9%)	64(18.2%)
11	Can miscarriage happen if mother is having drugs	229(65.2%)	88(25.1%)	34(9.7%)
12	Can smoking and Tabaco cause miscarriage in mother?	125(35.6%)	174(49.6%)	52(14.8%)
13	Can the 1st miscarriage leads to 2nd one?	213(60.7%)	88(25.1%)	50(14.2%)

Table 3. Knowledge comparison of mean

Demographic	N	Mean ± SD	P Value
Age group			
10-25	156	6.44 ± 2.813	.000
26-40	164	8.55 ± 3.255	
41-55	30	8.17 ± 2.437	
56-70	1	9.00 ± 0.000	
DOM group			
1-10	237	2.12 ± .746	**.068**
11-20	64	2.22 ± .678	
21-30	50	2.42 ± .609	
NOC group			
1-5	281	2.17 ± .230	**.621**
6-10	59	2.20 ± .714	
11-15	11	2.45 ± .522	
Address			
Abbottabad	1	1.00 ± .	
Barkhan	1	2.00 ±.	
Bhaghnari	1	2.00 ±.	**.972**
Chaman	3	2.00 ± 1.000	
D.Allah	1	2.00 ±.	
F.abad	2	2.00 ± .000	
Karachi	1	2.00 ±.	
Khanozai	2	2.50 ± .707	
Kuchlak	2	2.00 ± .000	
Khuzdar	3	2.33 ± .577	
Kohlu	1	3.00 ±.	
Kuchlak	4	2.25 ± .957	
Loralai	3	1.67± .577	
Musakhel	1	2.00 ±.	
Mustung	6	2.00 ± .632	
Nasrabad	1	2.00 ±.	
Noushki	3	2.00 ± 1.00	
Panjgur	1	3.00 ±.	
Pishin	13	2.08 ± .862	
Punjgur	1	3.00 ±.	
Quetta	294	2.20 ± .728	
Turbat	1	2.00±.	
Wahshuk	1	2.00 ±.	
Zhob	2	1.50±.707	
Ziarat	2	2.50 ± .707	

Table 3. Continue

Hospital visit			
1st time	90	.92 ±.738	.000
already visited	261	21.27 ± .695	
Education			
illiterate	169	2.02 ± .715	.000
primary	37	1.92 ± .722	
middle	32	2.12 ± .660	
matric	38	2.29 ± .654	
college	44	2.57 ± .587	
university	31	2.74 ± .575	

Table 4. Score Level

Score level:	Frequency	Percentage (%)
Poor knowledge	62	17.6
Average knowledge	190	54.1
Good knowledge	99	28.2

Table 5. Knowledge cross tabulation

Demographic	Poor knowledge	Average knowledge	Good knowledge	P value
Age group				
10-25	40	84	32	0.000
26-40	23	56	85	
41-55	2	17	11	
56-70	0	11	1	
Duration of marriage group				
1-10	53	102	82	0.52
11-20	9	32	23	
21-30	3	23	24	
Number of children group				
1-5				0.591
6-10	55	10	102	
11-15	10	27	22	
	0	22	5	
Address				
Abbottabad	1	0	0	0.952
Barkhan	0	1	0	
Bhaghnari	0	1	0	
Chaman	1	1	1	
D.Allah	0	1	0	
F.abad	0	2	0	
Karachi	0	1	0	
Khanozai	0	1	1	
Kuchlak	0	2	0	
Khuzdar	0	2	1	
Kohlu	0	0	1	
Kuchlak	1	1	2	
Loralai	1	2	0	
Musakhel	0	1	0	
Mastung	1	4	1	
Naseerabad	0	1	0	
Noushki	1	1	1	
Panjgur	0	0	1	
Pishin	4	4	5	
Punjgur	0	0	1	
Quetta	54	127	113	
Turbat	0	1	0	
Wahshuk	0	1	0	
Zhob	1	1	0	
Ziarat	0	1	1	

Table 5. Continue

Hospital Visit				
1st time	28	41	21	0.000
Already visited	37	116	108	
Education				
Illiterate	41	83	45	0.000
Primary	11	18	8	
Middle	5	18	9	
Matric	4	19	15	
College	2	15	27	
University	2	4	25	

Mann-Whitney U test
Kruskal Wallis test
Sig<o.o5

significance. Individual demographics were taken, and mean comparison was calculated. The p-values for all characteristics were calculated. The significant p values were found for age (p<0.00), education (p<0.00), Hospital visit (0.00). Beside these none of the demographic significantly associated with knowledge i.e. p<0.05.

Score Level

Table 4 shows the score level of knowledge among the participants. It was found that 62 (17.6%) participants had poor knowledge, maximum 190 (54.1%) had average knowledge while 99 (28.2%) participants had good knowledge.

Knowledge score and demographic cross tabulation

Table 5 shows knowledge scores and demographic cross tabs. Chi square test was performed among knowledge score group; categorized into three as poor, average and good knowledge. Result showed that demographic significantly associated with knowledge score group i.e. p<0.05 were age group, education and hospital visit.

DISCUSSION

This study stands to be the first study conducted in Balochistan covering the assessment of knowledge regarding risk factors of miscarriages.

The significance of this study lies in the fact that there has been limited work conducted on the diverse factors reaulting in miscarriages. It was found that 54.1% of the participants had average knowledge about risk factors of miscarriages while only 28.2% had good knowledge. This result is comparable to another study conducted in Nigeria where 73.5% of the participants had good knowledge about miscarriages (Abiola et al., 2013).

However, according to this study 38.6% women thought that thyroid disorders do not cause miscarriages while 41.4% said that they did not know of thyroid effecting miscarriages. In S Dandrino's women with Recurrent spontaneous miscarriages have a higher frequency of Anti Thyroid antibodies (Dendrinos et al., 2000). Moreover, in Lepoutre T's study reduction in miscarriages is seen through universal screening and treatment of thyroid autoimmune diseases (Lepoutre et al., 2012).

A similar study has been conducted in the UK regarding factors that lead to miscarriage but does not cover diverse factors (Regan and Rai, 2000), However, the current study covers diverse causes of miscarriage.

Researches about miscarriages have been conducted that may deal with either one or two risk factors at a time, but no research was found that included diverse factors leading to miscarriage. Moreover there are researches addressing the cause and risk factors but not assessing the knowledge of patients, In Pakistan and Balochiatan. This is the first research in the region that covers a vast range of factors concerning miscarriage.

CONCLUSION

This study significantly concludes that that 54.1% of pregnant women had average knowledge regarding risk factors of miscarriages. However, it was observed that most of this knowledge was based on their experience, experience of their acquaintance or the experience of their past pregnancies and complications they faced, if any. Majority of women were uneducated that is the reason that data they provided was most likely to be experience based rather than being logical. Therefore, there needs to be awareness programs regarding the nutritional, physical and mental health in relation to maternal health and pregnancy. Women should be taught about careful measures to deal ~~with~~ during gestational period in order to minimize all those risk factors that are preventable in cause of treating the problem of miscarriage. Alongside, women who are unable to access basic medical facilities should be taught how to deal with conditions during or after miscarriage as it could be highly

infectious if the products of miscarriage retained within. Self-medication, home treatment, home remedies and unhealthy eating habits that have been observed mainly during gestational period among pregnant women is important to address and work to spread awareness about.

Knowledge about dealing with health during gestational period still remains a topic not known by many uneducated people. The duration of gap to conceive after miscarriage and proper checkup to prevent any complications during next pregnancy are also topics to spread awareness about.

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