

## **Original Research Article**

### **Frequency of Teenage pregnancy, its associated risk factors, complications and impact on fetal outcome.**

#### **Abstract:**

**Aim:** To determine the frequency of teenage pregnancy with associated risk factors and various complications, and to evaluate the obstetric and fetal outcome.

**Methods:** This cross-sectional study was conducted at the departments of Community Medicine, Pathology and Gynecology & Obstetrics, Peoples University of Medical and Health Sciences, Nawabshah, and Suleman Roshan Medical College Tando Adam, from January 2019- June 2020, consisting of 108 teenage mother group (13-18 years) and 108 adult primigravid reference mother group (19-22 years) that gave birth during the study period.

**Results:** The teenage group had mostly Simple vaginal delivery 61.11% (n=66). Majority of the teenage mothers suffered from pregnancy complication of anemia 72.2% (n=78) compared with the reference group 22.2% (n=24). 46.29% neonates of the teenaged group mothers developed complications including Low birth weight 52% (n=26), Preterm Birth 10% (n=5) and most serious complication Perinatal death 4% (n=2) compared to the reference group.

**Conclusion:** The teenage pregnancies are high risk pregnancies with potential maternal and fetal complications.

**Key Words:** *Teenage Mothers, Maternal complications, Neonatal complications.*

## **Introduction:**

Pregnancy in maternal ages of 13-19 completed years is defined as teenage pregnancy<sup>1</sup>. Such pregnancies commonly occur in communities facing issues like illiteracy, poverty and unemployment. It is a global issue, having serious medical and social implications involving maternal and child health<sup>2,3</sup>. As it is labeled as a high-risk pregnancy with high incidence of preterm birth, low birth weight along with other poor pregnancy outcomes<sup>4</sup>. The teenager mother and its infants are more prone to complications during pregnancy and labor in comparison to adult mothers<sup>5</sup>. The girls in teenage are usually shorter, their bodies are not fully mature at the time they conceive, having lower body weight than older women<sup>6</sup>, so more nutrients are required during pregnancy than older women, so the teenage pregnancies and births are considered as risky<sup>7</sup>. According to UNICEF, every 5th child born to a teenage mother worldwide<sup>8</sup>. Around 16 million teenage girls (ages 15 & 19) give birth every year, and among these births 95% occur in developing countries. And it consists 11% of all births worldwide. Half of all adolescent births occur in seven countries: Bangladesh, Brazil, Democratic Republic of the Congo, Ethiopia, India, Nigeria and the United States of America<sup>9</sup>. Despite psychological trauma and labor pain, many surgical & medical complications of teenage pregnancy and childbirth may develop. Such surgical & medical risks are fully documented in the international literature, also includes increased risk of low birth weight, increased risk of preterm labor, increased labor and delivery complications like labor dystocia, eclampsia, preeclampsia, obstetrical hemorrhage and an increased risk of perinatal mortality<sup>2</sup>.

Hence, the present study was designed to determine the frequency of teenage pregnancy with associated risk factors and various complications, and to evaluate the obstetric and fetal outcome.

## **Methods:**

This cross-sectional study was conducted at the departments of Community Medicine, Pathology and Gynecology & Obstetrics, Peoples University of Medical and Health Sciences, Nawabshah, and Suleman Roshan Medical College Tando Adam, from January 2019 to June 2020. The study group consists of 108 teenaged mothers aged between 13-18 years compared with control group of 108 adult primigravid mothers, aged between 19-22 years that gave birth during the study period. We include all the mother of teenage group who delivered their babies at our center. Singleton pregnancy, primi, gestational age >28 weeks. All the mothers older than the teenage group, women with twin pregnancy, with major chronic diseases like heart and kidney diseases, diabetes mellitus, bronchial asthma, hypothyroidism, connective tissue disorders, having congenital disease or deformity or have undergone any surgical procedure apart from obstetric cause were excluded from the study.

Variables relating to the socio demographic characteristics of the women in the two groups were recorded on a proforma, such as, mother's education and occupation, husband occupation, marital status, marriage age, intended or unintended pregnancy, route of delivery, obstetric complications, gestational age, baby's birth weight and postpartum contraception method. The data collected was analyzed statistically and results were tabulated.

## **Results:**

During the study period a total number of 662 deliveries were performed at the study site, out of which the teenage mothers (13-18 years) were n=108 (16.3%), compared to the n=108 reference group (19-22 years) that match our inclusion criteria, were recruited in this study.

The mode of delivery was assessed for all the participants of both the groups, which showed that the teenage group had mostly Simple vaginal delivery 61.11% (n=66), while Cesarean Section mode was mostly observed among the reference group 57.4% (n=62). The Instrumental delivery were slightly more among the teenage group 4.62% (n=5). Table 1.

**Table - 1. Mode of delivery among the Teenage and Reference groups.**

Route of Delivery	Teenage group (13-18 years)		Reference group (19-22 years)	
	No of Cases	%	No of Cases	%
Simple Vaginal delivery	66	61.11 %	43	39.81 %
Instrumental Delivery	05	4.62 %	03	2.77 %
Cesarean Section	37	34.25 %	62	57.4 %
<b>Total Deliveries</b>	<b>108</b>		<b>108</b>	

A list of complications associated pregnancy was observed among both the groups. Majority teenage mothers suffered from Anemia 72. 2% (n=78) compared with the reference group 22.2% (n=24). Premature rupture of membranes, Preterm labor and Intrauterine infection were complications only observed among the teenage group mothers 27.77% (n=30), 19.44% (n=21) and 12% (n=13) respectively. Gestational hypertension and Preeclampsia were observed among both the groups with relatively less difference 12% (n=13) among the teenage group and 8.33% (n=9) among the reference group. Table 2.

**Table – 2. Complications associated with pregnancy among the Teenage and Reference groups.**

List of Complications	No. of Teenage Pregnancy (13-18 years)	%	Reference Group (19-22 years)	%
Anemia	78	72.2	24	22.2 %
Gestational Hypertension & Preeclampsia	13	12	09	8.33 %
Condyloma	02	1.85	02	1.85 %
Eclampsia	04	3.7	02	1.85 %
Premature rupture of membranes	30	27.77	-	-
Preterm Labor	21	19.44	-	-
Post term pregnancy	05	4.62	-	-
Dystocia	03	2.77	-	-
Intrauterine infection	13	12	-	-
Fetal malpresentation	04	3.7	01	0.92 %
Intrauterine growth restriction	02	1.85	01	0.92 %
Postpartum hemorrhage	03	2.77 %	01	0.92 %

Out of all the neonates born to both the groups, a total of 50 neonates of the teenaged group mothers developed complications (46.29%), which included Low birth weight 52% (n=26), Neonatal Jaundice 34% (n=17), Preterm Birth 10% (n=5) and most serious complication Perinatal death 4% (n=2). Table 3.

**Table. 3. Complications observed in neonates born to teenaged mothers.**

Neonatal complications	No of Newborn	%
Low birth weight	26	52 %
Neonatal Jaundice	17	34 %
Preterm Birth	05	10 %
Perinatal death	02	4 %
<b>Total</b>	<b>50</b>	<b>46.29 %</b>

### **Discussion:**

The main purpose of this study was to investigate the frequency of teenage pregnancy with determination of its associated maternal and fetal risks.

The increase in frequency of teenage pregnancy in the developing countries is one of the major health burdens not only for the mother but the neonate as well. The similar increased frequency pattern of teenage pregnancy was observed in this study as well 16.3 % (n=108). Our results were in accordance with the latest Pakistan Demographic Health Survey (PDHS) 20072 which reported the frequency of teenage pregnancy as 7% for Pakistan<sup>10</sup>. The reason of increasing frequency remains being the lack of education, awareness, antenatal care and poor implementation of law and order by the health authorities of the developing countries<sup>11</sup>.

Mode of delivery is the one of the important factors of pregnancy outcomes, therefore it was evaluated in this study to know whether it carries any significance in developing pregnancy related complications. In this study the three major mode of deliveries including Simple vaginal delivery, Instrumental delivery and Cesarean section were taken into account, the results showed

that the teenage group had mostly Simple vaginal delivery 61.11% (n=66), still more complications were observed in this group reason remain the growing age and the mother is physically and emotionally mature enough to reproduce. While Cesarean Section mode was mostly observed among the reference group 57.4% (n=62). The Instrumental delivery were slightly more among the teenage group 4.62% (n=5). Overall, the percentage of Cesarean section in Pakistan is about 37.20%<sup>12</sup>. The majority of Cesarean sections are a choice of women from urban, educated and wealthy background or women of these characteristics are targeted by physicians and facilities but further research can investigate why this population segment is having more Cesarean section deliveries in Pakistan.

These teenage mothers were evaluated for complication associated with pregnancy which demonstrated much higher rate and number of complications associated with the teenage pregnancies. Majority of the mothers in both the groups teenage suffered from Anemia, with relatively higher number in the teenage group 72.2% (n=78) compared with the reference group 22.2% (n=24), our results were similar to the findings of study conducted by Shah N et.al 2011<sup>13</sup> and Gupta N et.al 2008<sup>14</sup>. The reason could be the physical immaturity because these mothers are in growing phase, and may lack nutrients for the growing fetus. Premature rupture of membranes, Preterm labor and Intrauterine infection were complications mainly observed among the teenage group mothers. Whereas Gestational hypertension and Preeclampsia were observed among both the groups with relatively less difference among both the groups. However, a similar study conducted at Lahore, Pakistan, reported higher rates of pregnancy-induced hypertension, among the teenage mothers as compared to older mothers<sup>15</sup>.

Obstetric complications are not only confined to the mothers but they do have substantial influence on the developing fetus. It is well recognized that teenage pregnancies are at higher risk for adverse birth outcomes<sup>16</sup>. According to different studies conducted teenage pregnancy is associated with an increased risk of preterm birth, low birth weight infant, fetal or perinatal death<sup>17,18</sup>. Somewhat similar findings were observed by our study, demonstrating adverse birth outcomes such Low birth weight 52% (n=26), Preterm Birth 10% (n=5) and most serious complication Perinatal death 4% (n=2) among the teenage group.

## **Conclusion:**

This present study aimed to evaluate the frequency of teenage pregnancy, its complications and fetal outcomes. It was also concluded from the present study that Anemia, Preterm labor, Hypertensive Disorders of Pregnancy, Premature Rupture of Membrane, were major maternal complications and preterm birth, low birth weight and perinatal death were major adverse fetal outcomes. Teenage pregnancy till date, still signify one of the most significant public health problems. The health care provider should take in account the teenage pregnancy as a 'high risk' pregnancy and should provide awareness to the pregnant teenagers to have regular antenatal visits so that various complications of teenage pregnancy could be recognized and avoided.

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