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The Impact of Early and Late Adolescent Pregnancies on Some Adverse Maternal and Neonatal Health

Dr. Ezedeen F Bahaaldeen
Assistant Prof, Maternal and childhood Department
College of Nursing, University of Baghdad, Consultant Gynecologist& Obstetrician
E-Mail: ezedeengo@yahoo.com

Dr. Sawsan Ali Aljeeda
Assistant Proft, College of Nursing, University of Baghdad
E-Mail:sawsanhassani@yahoo.com

Abstract:
The objective: This study aims to identify some of the major risks in pregnancy, birth out comes and its effect on their neonatal health and wellbeing among the adolescent pregnant women in Baghdad. As well as to assess some of the demographic variables among the study sample.***Method:*** A descriptive, prospective purposive study was carried out among 350 women aged 13 -19 years with 28 completed weeks of gestation and more attending labor word in Al Elweyiah Maternity Teaching Hospital ,the they are sub categorized in to two groups, of which 110 of them were less than 16 years age(early adolescents), while 240 of them were between 16-19 years age(late adolescents), this study were conducted from October 2012 to June 2013, the information's gathered through direct interview with the pregnant women before and after labor, A significant relationships were found between these two maternal age groups in relation to their health and birth out comes mode of labor and neonatal health. Statistical analyses were applied in this study in the form of chi square.***The results :*** This study shows that the majority of early adolescent pregnant clients lives in urban areas, primary school graduates, housewives, lives in extended families, relatives with their husbands , they have the higher incidence of PIT, chronic UTI, emergency cesarean section, PPH, puerperal sepsis, low birth wt, low apgar score, RDS.While in the late adolescent age group the majority lives in city center, intermediate school graduates, still students, lives in nuclear families, there is higher incidence of anemia, postnatal hypotension,***Recommendations:*** Early adolescent pregnant women are associated with high fetomaternal risks, and extra care and close follow up are recommended during antenatal care visits, the labor should be attended by the most expert obstetricion, its essential to have the best postnatal care, also I recommend to establish a good educational programs to minimize the risks of fetomaternal morbidity as a consequence of early adolescence pregnancies.
Keywords: Impact, Adolescent, pregnancies, Maternal, Neonatal, Health.

The introduction:

Worldwide about 14 million adolescent girls give birth, while about 4.4 million have abortions(1). Maternal age at conception has long been demonstrated to have significant correlation with pregnancy outcome and maternal health (2).

The incidence of teenage pregnancy is considered high compared to the earlier days, the main contributing factors are earlier onset of puberty and earlier first intercourse in teenagers compared with those in the past(2).

Teenage or adolescent period of females is the transitional stage of physical and mental development between childhood and adulthood (3).early pregnancy is considered to be a problem word wide, middle, or low income population alike (4).There may be large difference among countries in the proportion of girls bearing a child before the age of 20, it is estimated that (25%) of women have their first child before the age of 20 (4).

According to Yampolskaya, Brown, and Vargo (2004), "...approximately 60% of adolescent mothers live in poverty at the time of the birth of their babies, and approximately 73% go on welfare within 5 years of giving birth"(5). Some researchers observed that pregnant teenagers showed higher incidences of anemia (3).

Associated Factors with teenage pregnancy includes Poverty, Unemployment, Failing Nuclear Families, Abuse, Early Menarche, Gang Activity, Domestic violence, Coercion, Early Marriage, Rape, Alcoholism, Substance Abuse, Social Pressures, Low Self Esteem, School Drop outs, Poor educational opportunities, Poor access to health care, Influence of the media (6,7,8).

Higher Risk with Adolescent Pregnancy Birth and Postpartum Complications Hypertension, Eclampsia, Anemia, Difficult labor and childbirth as a result of cephalopelvic disproportion, increased maternal mortality, Low Birth Weight (9)

Adolescent Pregnancy Leads to Unsafe Abortions according to a study in Nigeria in the early 1990's, that included about 144 women (half of which were under 20 years of age), reported that many complications-including a 9% death rate. Only 25% had no complications. In some urban areas unmarried adolescents

represent the majority of all abortion seekers, In developing countries, the risk of death following unsafe abortions is several hundred times higher than one performed professionally in safe conditions. Almost 14% of all unsafe abortions occur in adolescents under the age of 20 (10).

The rate of teenage pregnancies is higher in Africa than any other region (11).

Chile More than 30,000 adolescents between the ages of 15 and 19 give birth every year. From 1990 to 2003, the proportion of live births to teenage mothers rose from 13.8 percent of all births to 14.9 percent. In 2003, 17 of the 994 babies (1.7 percent) born to mothers under age 15 died (12).

335 of the 33,838 babies (1.0 percent) born to mothers between the ages of 15 and 19 died (12).In South Africa The number of pregnant school girls jumped from 1,169 in 2005 to 2,336 in 2006 in Gauteng. One in three girls has had a baby by the age of 20. 16 percent of pregnant women under the age of 20 tested HIV positive. 30 percent of girls in South Africa said "their first sexual experience was forced (12).

Afghanistan 57% of marriages are by girls under the age of 16 years old which has led to an increased maternal mortality rate. More than half marry in their teens 12% aged 15-19 a child 25% report sexual coercion that leads to an unintended pregnancy, 39% aged 12-24 state that the last abortion they were involved in took place (13).

In the United States One million teenagers become pregnant annually. The United States has the highest rate of teen pregnancy, childbirth and abortion among developed countries 63% give birth, and 22% have abortion (14).

According to the Centers for Disease Control (CDC), teenage pregnancy rates nationally dropped 27 percent overall during the years 1990-2000. Despite the decline, the teenage pregnancy rate in the United States is still the highest among industrialized nations. Even with the drop, 35 percent of U.S. teenage girls become pregnant at least once before age 20 (15).

Healthy People 2010 In an attempt to decrease adolescent pregnancy, Healthy People 2010 recommended the goal of increasing the “proportion of sexually active, unmarried adolescents aged 15 to 17 years who use contraception that both effectively prevents pregnancy and provides barrier protection against disease (16).

The pregnant teenagers will need support during and after pregnancy from her family and friends and from the father of the baby (17).

Methodology

A descriptive, purposive study started at October 8th, 2012 and finished at June 20th, 2013. The present study is carried out for the pregnant teenagers (adolescents) in the third trimester who attend Al- Elweyiah Maternity Teaching Hospital in Baghdad for labor.

An assessment tool is constructed in a form of a questionnaire of (9) main parts as follows: demographic characteristics of the pregnant adolescent, obstetrical history, medical history, social aspect, clinical observations, biochemical tests, follow up chart and partogram, Abgar score list, post natal observational chart.

Data are collected through direct interview of the clients, reviewing the medical records, antenatal charts, Ultrasound reports, laboratory tests, such as GUE, Hb gm/100ml, PCV%, blood group & Rh, FBS, clinical assessments and observations on individual basis

Results

Table 1. Distribution of Study Sample According to Age Group

Variables	Group	Frequency	Percent
Age group in years	13-16 (early adolescent)	110	31.4%
	17-19 (late adolescent)	240	68.6%
Total	13-19 (adolescent age)	350	100%

This table shows that the higher incidence (68.6%) of the total study sample at age group 17-19 years old (late adolescent) of study sample.

Table 2 . Distribution of Demographic characteristics of the study sample

Residency	**City center**	**48**	**43.6**	**148**	**61.7**
	Urban	**62**	**56.4**	**92**	**38.3**
Level of Education	**Unable to read and write**	**14**	**12.7**	**18**	**7.5**
	Able to read and write	**20**	**18.2**	**30**	**12.5**
	Primary school graduate	**61**	**55.5**	**78**	**32.2**
	Intermediate school graduate	**15**	**13.6**	**82**	**34.2**
	Secondary school graduat	**0**	**0**	**32**	**13.3**
Occupation	**Government work**	**0**	**0**	**8**	**3.3**
	Private work	**18**	**16.4**	**36**	**15**
	Student	**37**	**33.6**	**88**	**36.7**
	Housewife	**55**	**50**	**76**	**31.7**
Type of the family	**Extended family**	**76**	**69.1**	**116**	**48.3**
	Nuclear family	**34**	**30.9**	**124**	**51.7**
Consanguinity		**72**	**65.5**	**84**	**35**

This table shows that the higher incidence of early adolescent pregnant clients (56.4%) lives in urban areas, (55.5%) are primary school graduates, (50%) of them are housewife's, (69.1%) are living in extended families.While the higher incidence of late adolescent pregnant clients (61.7%) lives in the city center, (34.2%) are intermediate school graduates, (36.7%) are students, (51.7%) are living in nuclear families.

Table 3: The Relationship of the Age Groups & Some Antenatal Maternal Conditions.

Ante natal maternal condition / Age group	**Stable general condition**		**Pregnancy induced hypertension**		**Anemia**		**Chronic UTI**		**Total**	**C.S P=Value**
	Freq.	**%**	**Freq.**	**%**	**Freq**	**%**	**Freq**	**%**		
13 – 16	44	40	17	15.5	25	22.7	24	21.8	110	**X^2=23.67 d.f = 3 P=0.05 Sig.**
17 – 19	124	51.7	22	9.1	79	32.9	15	6.3	240	
Total	168		39		104		39		350	

This table shows that there is a statistical difference among age groups of adolescence and their antenatal conditions. It present that there is a higher incidence of the late adolescent group (51.7%) are having stable antenatal condition in compares to (40%) of the early adolescent group, and the higher incidence of anemia (32.9%) also presents in late adolescents, while the higher percentage of PIH (15.5) and chronic UTI (21.8%) presents in the early adolescent group.

Table 4: The relationship between the age groups and the mode of labor.

Mode of labor / Age group	Normal vaginal delivery		Caesarean section		Total	c.s p=value
	Freq.	%	Freq.	%		
13 – 16	69	62.7	41	37.3	110	$X^2 = 7.77$ d.f. = 1 P=0.05 Sig.
17 – 19	185	77.1	55	22.9	240	
Total	254		96		350	

This table shows that there is a statistical differences among age group and mode of labor at (P=0.05) . The higher incidence of late adolescents pregnant laboring clients (77.1 %) are delivered by normal vaginal delivery, in compare to (62.7%) of the early adolescents, and that the higher incidence of cesarean sections (37.3%) are performed to early adolescent laboring clients in compare to (22.9%) that are performed to the late adolescent age group.

Table 5 the relationships of the age groups & some postnatal maternal observations.

Post natal 0bservation Age group	Stable general condition		PPH		hypotension		Puerperal sepsis		Total	c.s p=value
	Freq.	%	Freq.	%	Freq.	%	Freq.	%		
13 – 16	59	53.6	27	24.5	11	10	8	7.3	110	$X^2=7.79$ p= 0.05 d.f = 3 Sig.
17 – 19	137	57.1	47	19.6	51	21.3	10	42	240	
Total	196		74		62		18		350	

This table shows that there is a statistical difference among age groups of adolescence and their postnatal conditions. the higher incidence of stable maternal postnatal condition(57.1%) are present in the late adolescent group in compare to (53.6%) of the early adolescents, and that the higher incidence of PPH (24.5%) , and puerperal sepsis (7.4%) are present in the early adolescents while the higher incidence of hypotension (21.3%) are present in the late adolescent ante natal period .

Table 6: The relationships between the adolescent maternal age groups and some of neonatal observations.

Neonatal condition Age group	Normal		Low birth weight		Low abgar score		DS(respiratory distress syndrome)		Total	c.s p=value
	Freq.	%	Freq.	%	Freq.	%	Freq.	%		
13 – 16	39	35.5	41	37.3	21	19.1	9	8.2	110	$X^2=25.3$ p= 0.05 d.f =3 Sig.
17 – 19	149	62.1	51	21.3	35	14.6	5	2.1	240	
Total	188		92		56		14		350	

This table shows that there is a statistical difference among age groups of adolescence and their neonatal conditions. The higher percentage of the normal neonates(62.1%) are those whom delivered by late adolescent group, in compare to(35.5%) of the early adolescents , and that the higher incidence of low birth wt (37.7%), low apgar score (19.1%) and respiratory distress syndrome (8.2%)are delivered by the early adolescent pregnant clients.

Discussion

According to the results of this study it's clear that the early adolescent mother hood has some important demographic and clinical variables differs than that of the late adolescent once, and this findings are supported by (The sociodemographic risk factors known to be more prevalent in teenage gravidas were poverty, low education level, inadequate prenatal care and unmarried status. Some investigators believed that the adverse outcomes observed in teenage pregnancies might have been attributable to these sociodemographic factors) (18) . it's also important to know that I didn't find during reviewing the literatures a sub classification of the adolescent pregnancies in to early and late once, according to the result that is demonstrated in table 1 which shows that the higher incidence (68.6%) of the total study group 350 adolescent pregnant clients is of 17-19 years old (late adolescent) and this indicates that late adolescent marriages is more common in our community than the early adolescent once. Although there is a global increase in adolescent pregnancies. (Some important factors have strongly influenced the teenage pregnancy rate in recent decades. The first factor is the declining age at menarche. Historical data from the United States and several European countries show a clear secular trend, with age at menarche declining at a rate of 2–3 months per decade since the 19th century, resulting in overall declines of about 3 years. The decline in the age of menarche is attributed mostly to improved health and nutrition. The second factor is that the first sexual activity is initiated at a much younger age. The youth risk behavior study (YRBS) suggested that almost one-half of the United States high school students have had sexual intercourse in their lifetime, while ~7% initiated sexual intercourse before the age of 13 years. The third factor is the low use rate of contraception. (19)

Table 2 shows that the higher incidence of early adolescent pregnant clients (56.4%) lives in urban areas, in the urban areas that surrounds the city center the main occupation of the families is agriculture so the habits of early marriage and having large number of the family members is of the important goals of them to help in doing their job , also (55.5%) are primary school graduates early adolescent marriage is an important cause for the girls to leave their schools and getting pregnant adds additional factor to neglect their learning, (50%) of them are housewives and this is due to the same above explanation as well as being smaller than 16 yrs old and without certificates on the other hand being in faraway from the working places all of the mentioned factor makes the easiest choice that is to be a housewife, (69.1%) are living in extended families and this is the natural end results of having such big family members living together in wide scattered lands. the impact of these demographic variables on the birth out comes an important issue to be discussed and this goes with Xi-Kuanchen explanation when he says, Whether the association between teenage pregnancy and adverse birth outcomes could be explained by deleterious social environment, inadequate prenatal care, or biological immaturity remains controversial (20).

While the higher incidence of late adolescent pregnant clients (61.7%) lives in the city center, (34.2%) are intermediate school graduates, (36.7%) are students, (51.7%) are living in nuclear families and this is due to the availability of the secondary schools nearby in the city center ,being of higher social classes and the well of living in independent life. On studying table 3 which shows the relationships of the two adolescent age groups toward some of the antenatal complications and shows that the higher incidence of the late adolescent group (51.7%) are having stable antenatal condition in compares to (40%) of the early adolescent group and this goes with the better anatomical , physiological ,hormonal and psychological maturation in the late adolescent group, and the higher incidence of anemia (32.9%) also presents in late adolescents and this is due to the different life style in the modern communities where they afraid from gaining extra body wt and the change of the body image as well as the ignorance of tonics intake , while the higher percentage of PIH (15.5) and chronic UTI (21.8%) presents in the early adolescent group and this is due to the intolerance of the early adolescent pregnant clients to the extra burden of the physiological changes on the various body organs of the growing and newly maturing girl. these findings are supported by Adolescent pregnancy has lonely been a problem with adverse obstetric and neonatal outcomes being influenced by biological immaturity, unintended pregnancy, inadequate perinatal care, poor maternal nutrition, and stress. (21) .

Also these findings goes with the explanation of the more body demands to grow (Teenage mothers who themselves continued to grow during pregnancy could compete with the developing fetus for nutrients, which has been supported by some studies that weight gain during pregnancy might be more critical for teenage mothers than for older mothers).(22)

Table 4 , This table shows that the higher incidence of late adolescents pregnant laboring clients (77.1 %) are delivered by normal vaginal delivery which indicates the better tolerance and co operations toward achieving the goal of normal vaginal delivery , in compare to (62.7%) of the early adolescents, and that the higher incidence of cesarean sections (37.3%) are performed to early adolescent laboring clients which is due to the extra fear and mental as well as physical immaturity in this group in compare to (22.9%) that are performed to the late adolescent age group.

Table 5, which shows that the higher incidence of stable maternal postnatal condition (57.1%) are

present in the late adolescent group in compare to (53.6%) of the early adolescents which is due to the better knowledge and maturation of the older adolescent group, and that the higher incidence of PPH (24.5%) which is mainly due to uterine inertia that can complicates the early adolescent group , and puerperal sepsis (7.4%) are also present in the early adolescents which is the common squally of low immunity and the higher incidence of chronic UTI that they had, while the higher incidence of hypotension (21.3%) are present in the late adolescent ante natal period which is explained by their higher incidence of anemia that they have in association with maternal distress(23).

Table 6, which shows that the higher percentage of the normal neonates(62.1%) are those whom delivered by late adolescent group, in compare to(35.5%) of the early adolescents and that is obviously follows the fact that the healthy mother usually gives birth to a healthy off springs , and that the higher incidence of low birth wt (37.7%), low apgar score (19.1%) and respiratory distress syndrome (8.2%)are delivered by the early adolescent pregnant clients which is the common end results of immaturity and lower tolerance of such very young mothers and .and this findings goes with the study of Xi when he said that(Infants born to teenage mothers aged 17 or younger had a higher risk for low Apgar score at 5 min). also he found that his findings challenges the accepted opinion that adverse birth outcome associated with teenage pregnancy is attributable to low socioeconomic status, inadequate prenatal care and inadequate weight gain during pregnancy(20).

Recommendations

Early adolescent pregnant women are associated with high fetomaternal risks, and extra care and close follow up are recommended during antenatal care visits, the labor should be attended by the most expert obstetrician, it's essential to have the best postnatal care, also I recommend to establish a good educational programs to minimize the disaster of fetomaternal morbidity as a consequence of early adolescence pregnancies in the form of

- Focusing on women and girl's reproductive health and its outcomes.
- Providing intensive obstetric care to the adolescent pregnant clients specially the early adolescent once. .
- The provision of reproductive health care services to the adolescents that requires sensitivity to the special needs of this age-group including knowing about laws, about confidentiality and services for family planning and birth control in our country, as well as the pregnancy needs and the best ways to avoid the possible complications to the adolescent pregnant clients and their babies.

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