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Maternal and Neonatal Outcome of Teenage Pregnancy at El- Fayoum University Hospital

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Abstract

Background: Teenage pregnancy is associated with significant risks for both the mother and infant, particularly in developing countries like Egypt. **Aim:** This study aimed to assess the maternal and neonatal outcomes of teenage pregnancy at El-Fayoum University Hospital. **Design:** A descriptive study design was employed for this research. **Setting:** The study was conducted at the postpartum ward of the obstetric department at El-Fayoum University Hospital. **Sample:** A purposive sampling of 100 teenage mothers in the postpartum period. **Tools:** Three tools were utilized to collect data for the study: (1) Structured Interviewing Questionnaire, (2) Assessment of Maternal and Neonatal Outcomes and (3) Attitude Likert Rating Scale. **Results:** The findings of the study indicated that over half of the teenage mothers and their neonate experienced significant complications. These complications included anemia, postpartum blues, obstructed labor, preterm labor, abortions, perineal tear, stillbirth, breastfeeding problems, hyperbilirubinemia, respiratory distress syndrome (RDS), and low birth weight (LBW). Additionally, the majority of the teenage mothers held a positive attitude regarding the causes and consequences of teenage pregnancy on their overall health and pregnancy outcomes. **Conclusion:** Pregnancy occurring before the age of 20 is considered a high-risk pregnancy and is associated with unfavorable outcomes for both the mother and neonate, negatively impacting their health. **Recommendation:** It is recommended to implement regulatory health education programs targeting youth and their parents, focusing on the psychological, social, and medical hazards of early marriage and early pregnancy. Additionally, mass media campaigns should be utilized to raise public awareness about the risks and adverse outcomes of early marriage and teenage pregnancy.

Keywords: *Maternal and Neonatal Outcome, Teenage Pregnancy.*

Introduction:

Adolescent age starts at puberty and ends when biological, and physical maturity occurs at adulthood age .The World Health Organization (WHO, 2021) defines adolescents as those between 10 and 19 years of age. It considered a period of transition from childhood to adulthood. Adolescent girls constitute about 1/5th of the total female population in the world. The period of adolescence for a girl is a period of physical and psychological preparation for safe motherhood ***(Mamo& Birhanu, 2021).*** According to the United Nations International Children's Emergency Fund (UNICEF), teenage pregnancy is defined as pregnancy among girls aged 13–19 years. Teenage pregnancy is a global problem. About 21 million pregnancies in teenagers aged 15-19 years occur in developing countries every year. Half of these pregnancies are undesirable and more than half of them end in abortions and most of these abortions are illegal ***(Mezmur et al., 2021).***

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Teenage fertility becomes a matter of concern, owing to the increase in the death rate of teenage mothers and their newborn. This is due to the adverse effects of early pregnancy on the physiological, physical, social, and economic status of the females. Bearing children during the teenage affects the educational growth of females and evidence from several studies indicate immaturity and delayed physiological development in teens are more likely for obstetric complications ***(Khan& Idris, 2023).***

Adolescent pregnancy is influenced by various factors, including early marriage, risky sexual behavior, substance use, family experiences of adolescent childbearing, and inadequate sex education and health services. Among these factors, early marriage stands out as a significant contributor to teenage pregnancy. When girls marry early, they face challenges in making decisions about delaying childbirth or accessing contraceptives, ultimately impacting the health outcomes of both the young mothers and their children **(Liu et al., 2024).**

Adolescent pregnancies also have long-term problems, such as higher rates of maternal postpartum depression, which influence maternal-neonatal bound and reduce adherence of breastfeeding and emotional syndrome in the offspring .All these complications in adolescents could be worsened by maternal malnutrition, toxic habits and inadequate prenatal care Therefore. WHO warns of the importance of caring for pregnant adolescents, especially in underdeveloped and developing countries, which have poorer health systems ***(Dela Calle et al., 2021).***

Teen childbearing may impact child outcomes for a number of reasons delaying a first birth may allow for accumulation of maternal human capital or increased maturity which could, in turn, improve a mother's child rearing capabilities. On the other hand, teenagers may have more energy or be more physiologically fit to rear children ***(Ranjbar et al., 2023).*** Birth in teenage is a major risk factor for adverse pregnancy outcomes and has a significant negative impact on the future well-being of the infant as well as the mother .The adverse maternal and perinatal outcomes of adolescent pregnancy have been well-documented to be associated with low birth weight, preterm delivery, perinatal death maternal death and neonatal asphyxia in low- and higher-income countries ***(Shri et al., 2023).***

Nurses play a critical role in reducing the rate of teenage pregnancy. Specifically,nurses can educate and counsel youth about sexuality, reproduction, and contraception. Also, work with teenagers before they become sexually active through developing, implementing, and evaluating community-based teenage pregnancy prevention programs and trying to respond to pregnant teenage physical, psychological, and sociocultural needs ***(Riedl et al., 2022).*** Nurses also should deliver effective antenatal care for pregnant teenagers through prompt identification, prevention and management of health related problems that may impact on maternal and neonatal outcomes ***(Anyigor-Ogah et al., 2024).***

Significance of the study:

Teenage pregnancy is a global phenomenon with clearly known causes and serious health, social and economic consequences to individuals, families and communities. An estimated 21 million girls aged 15 to 19 years in developing regions become pregnant every year, and approximately 12 million of them gave birth. Nearly 95% of these births which make up around 11% of all births worldwide take place in underdeveloped nations. Developing countries have distinctly different rates of teenage pregnancy. In Egypt; the incidence of teenage pregnancy is 9.6% **(Alyamani, Elewa & Newira, 2021).** Teenage pregnancy rates varied by region, from 2% in China to 18% in Latin America and more than 50% in sub-Saharan Africa**.** The prevalence rate of teenage pregnancies seems to be on the increase, especially in rural communities **(Zemene et al., 2024).**

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Adolescent pregnancy is a serious medical concern, accounting for 11% of all births and 23% of pregnancy complications worldwide. In Egypt, it is estimated that 70,000 pregnant teenagers die each year due to physical immaturity (**Eldaboly et al., 2021)**. Although there has been a decline in the global prevalence of adolescent birth rates, from 65 births per 1000 women in 1990 to 47 births per 1000 women in 2015, the incidence of adolescent pregnancies remains unacceptably high in sub-Saharan Africa. Despite concerted efforts from both governmental and non-governmental entities, the region continues to face challenges in addressing and reducing adolescent pregnancies **(Nuwabaine et al., 2023).**

Unfortunately, lack of public awareness especially in rural areas like El-Fayoum about the risks and adverse outcomes of early marriage and teenage pregnancy and also the unavailability of a national plan to provide educational programs targeting the general population especially the teenagers remain barriers to reduce the early marriage and early pregnancy. So, this study is intended to explore the maternal and neonatal outcomes of teenage pregnancy among teenage mothers at El-Fayoum university hospital.

Aim of study:

This study aimed to assess maternal and neonatal outcomes of teenage pregnancy at El-Fayoum university hospital.

Research question:

What are the maternal and neonatal outcomes of teenage pregnancy at El- Fayoum university hospital?

Subjects and Methods:

I. Technical Item:

Research design:

A descriptive study design was used in this study to assess the maternal and neonatal outcomes of teenage pregnancy at El-Fayoum university hospital.

Setting:

The study was conducted at the postpartum ward of the obstetric department at El-Fayoum University Hospital.

Type of Sample: A purposive sample for total of 100 teenage mothers was determined.

Sample size:

Sample size of 100 patients was calculated using the infinite equation according to Epi info 2000 software based on the prevalence of 80% and precision of 2% at a confidence interval of 95% Effect size 1 And power of 80% with increased by 10% to overcome missing or incomplete data.

Tools for data collection:

The data was collected by using three tools:

Tool I: Structured Interviewing Questionnaire:

It was designed by the researcher based on reviewing related literatures and consisted of 23 questions. It was divided into 3 parts:

Part (1): Demographic characteristics of teenage mothers:

It was designed to assess the teenage mothers' characteristics such as age, level of education, occupation, residence, age at marriage and the monthly income.

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Part (2): Previous obstetric history of teenagers:

It was designed to assess the teenage mothers' previous obstetrical history such as number of gravities, parity, abortion, multiple pregnancies and preterm, mode of previous deliveries, place of delivery and maternal complications of previous pregnancy, delivery, and postpartum period.

Part (3): Current obstetric history of teenagers:

It was designed to assess the teenage mothers' current obstetrical history including if the mother had antenatal care and follow up during this current pregnancy, if these antenatal visits were regular or irregular and the time of first antenatal visit, if this pregnancy was planned or not, if the pregnancy wasn't planned, what are the reasons, date of delivery and mode of delivery.

Tool II: Assessment of Maternal and Neonatal Outcomes Tool:

This tool is adapted from **(Shaban, 2016)** and modified by the researcher to assess the maternal and neonatal outcomes of this current pregnancy. It consisted of 30 questions, and it was divided into 2 parts as follows:

Part (1): Assessment of maternal outcomes of current pregnancy:

It included maternal complication such as abortion, anemia, preeclampsia, gestational diabetes, bleeding, premature rupture of membrane (PROM), preterm labor, perineal tear, postpartum hemorrhage, puerperal sepsis, postpartum blues and mastitis.

Part (2): Assessment of neonatal outcomes of current pregnancy:

It included neonatal complication such as low birth weight, preterm delivery, respiratory distress syndrome, neonatal hyperbilirubinemia, sepsis, asphyxia, stillbirth, admission to ICU and if yes, what are the reasons for this admission?

Tool III: Attitude Likert Rating Scale:

The Attitude Likert Rating Scale utilized in this study was adapted from (**Naghizadeh & Mirghafourvand, 2022)** and modified by the researcher to evaluate the attitudes of teenage mothers regarding the causes and consequences of teenage pregnancy. The scale comprised 12 statements, and for each statement, teenage mothers were presented with three response options:

- A positive response, indicating agreement, was assigned a value of 3.
- No opinion or uncertainty, denoted as indifference, was assigned a value of 2.
- A negative response, indicating disagreement, was assigned a value of 1.

The total score for each participant ranged from 12 to 36. If the total score was less than 60% (< 22 points), it indicated a negative attitude. Conversely, if the total score was equal to or greater than 60% (≥ 22 points), it indicated a positive attitude towards the causes and negative consequences of teenage pregnancy.

Validity and reliability:

Revision of the tools for clarity, relevance, comprehensiveness, understanding, and applicability was done by a panel of expertise composed of 5 professors of obstetrics and community health nursing to measure the content validity of the tools and the necessary modifications was done accordingly. Cronbach Alpha coefficient test was used to measure the internal consistency of the tools used in the current study.

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Ethical consideration:

The research approval for this study was obtained from the Scientific Ethical Committee in the Faculty of Nursing at Helwan University before the commencement of the study. The researcher took the necessary steps to ensure ethical considerations were followed throughout the study. The objectives of the study were clearly explained to the teenage mothers included in the study, which helped establish trust and confidence. The researcher also assured the participants that their identities would remain anonymous, and their data would be kept confidential. The teenage mothers were informed about their right to choose whether or not to participate in the study, and they were also informed that they had the freedom to withdraw from the study at any time without facing any consequences.

II. Operational Item:

Preparatory phase:

It includes reviewing of the current and relevant related literature and theoretical knowledge of the various related aspects of the study using books, articles, scientific journal, and internet with the aim of acquiring in-depth knowledge about the study. During this phase, the researcher also visits the selected place to get acquainted with the personnel and the study setting. The development of the tools was under supervisors' guidance and experts' opinions were considered.

Pilot Study:

The pilot study was conducted on 10% (10 of teenage mothers under the study) to test the clarity, applicability and the efficiency of the tools and time needed for data collection. Based on the results, required modification were done in the form of adding or omission of some questions. Women who were chosen in the pilot study were excluded from the study sample later.

Field work:

Data were collected in following sequence:

- Once the research approval was obtained, the sample was collected from the obstetric postpartum ward three days a week, specifically from 9 a.m. to 2 p.m. The data collection process commenced on May 1, 2023, and concluded after six months, by the end of October 2023.
- The researcher introduced herself to the women and explained the purpose of the study in order to establish trust and encourage their participation. Informed consent was obtained from each participant before proceeding.
- The assessment process was conducted individually by the researcher. A structured interviewing questionnaire sheet was used to gather information about the teenage mothers' characteristics, as well as their previous and current obstetrical history. It took from 10- 15 minutes.
- Following the questionnaire, the researcher assessed the maternal and neonatal outcomes using tool II. It took from 15- 20 minutes.
- The attitude of the teenage mothers towards the causes and consequences of teenage pregnancy was assessed using the Likert rating scale (tool III). It took from 5- 10 minutes.
- The total time needed to fill in the questionnaire took about 30 to 45 minutes.

III. Administrative design:

An official letter to conduct this study clarifying the purpose and setting of the study was obtained from the Dean of the Faculty of Nursing, Helwan University to the manager of El- Fayoum University Hospital as an approval to obtain the permission and cooperation.

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IV. Statistical analysis:

The data was collected, coded, and entered to a personal computer. It was analyzed with the program statistical package for social science (SPSS) version 19. The collected data was organized, revised, analyzed, and presented in numbers and percentage in tables, figures, and diagram. Proper and suitable statistical tests were used to test the significance of results obtained.

Results:

Table (1): Presents the demographic characteristics of the study group. The mean age of the participants was 18.4 ± 0.74 years old, while the mean age at marriage was 16.4 ± 0.98 years old. In terms of education level, 39% of the participants had a diploma, while the remaining 61% had other educational backgrounds. The majority of the participants (88%) were housewives, with only 12% engaged in other occupations. Regarding residence, 78% of the participants were from rural areas, while 22% resided in urban areas. In terms of monthly income, 38% of the participants reported barely sufficient income, 18% had insufficient income, and the remaining 44% had other income levels.

Table (2): Reveals that, more than half (69%) of women included in the study had 2 to 3 times gravity, and 1 to 2 times represent about two third(64%)of parity, around one half (45.3%) of abortion, and less than one quarter (16%)of them had multiple pregnancy,(17.3%) of preterm labor. Around one half (54.7%) of them deliver vaginal, hospital doctor attendance in majority (85.3%) of them.

Table (3): Illustrates that less than two-thirds of women (62.7%) experienced pregnancy complications, with approximately half of them (51.1%) specifically dealing with anemia. A history of stillbirth was found in less than a quarter of women (13.3%), while around one-third (38.7%) reported postpartum complications, including perineal tears in nearly half of those cases (44.8%).

Table (4): The data reveals that a significant majority of women (87%) availed antenatal care services, with approximately two-thirds of them (65.5%) receiving regular care. A substantial number (70.1%) initiated antenatal care during the first trimester. Moreover, more than a quarter of women (30%) stated that their current pregnancy was unplanned, and among them, the main cause cited by nearly two-thirds (63.3%) was the misuse of contraceptives.

Table (5): indicates that in the current pregnancy, the most common maternal problems were anemia about one half of cases (59%), followed by postpartum blues in about one half of them (46%)and less than half(45%) had problem in breast during lactating and less common health problem was eclampsia which represent less than one quarter (1%) of women.

Table (6): illustrates that in current pregnancy the most common neonatal problems were hyperbilirubinemia in about half of study group (49%), followed by RDS in about one third of them (30%). The less common health problem was still birth which represents (4%) of women. As regards most common cause for neonatal admission to NICU was pathological hyperbilirubinemia represent about one half (47.4%) of study group followed by one quarter (26.3%) had sepsis.

Figure (1): illustrates that the majority (91%) of teenage mothers included in the study show a positive attitude towards the causes and consequences of teenage pregnancy on their overall health and pregnancy outcomes while the minority of them (9%) had a negative attitude.

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Table (1): Distribution of Teenage Mothers Regarding Their Demographic Characteristics n= 100.

Variables	Number (n=100)	
	Mean ±SD	**Range**
Age (years)	18.4±0.74	16-19
Age of marriage **(years)**	16.4±0.98	14-19
Educational level	**No.**	**%**
Can't read and write	20	20
Read & write	14	14
Primary	4	4
Secondary	6	6
Diploma	39	39
University	17	17
Occupation		
Housewife	88	88
Employee	12	12
Residence		
Rural	78	78
Urban	22	22
Monthly income		
Sufficient	44	44
Barely sufficient	38	38
Insufficient	18	18

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Table (2): Distribution of Teenage Mothers Regarding Previous Obstetric History.

Variables	**Number** (n=100)	
	No.	**%**
Gravity		
Primigravida	25	25
2 to 3 times	69	69
4 or more times	6	6
Parity		
None	27	36
1 to 2 times	48	64
Number of previous abortion (n=75)		
None	40	53.3
1 to 2 times	34	45.3
3 or more times	1	1.4
Number of multiple pregnancy (n=75)		
None	59	78.7
1 to 2 times	12	16
3 or more times	4	5.3
Number of preterm labor (n=75)		
None	62	82.7
1 to 2 times	13	17.3
Mode of previous delivery	**(n=75)**	
Normal vaginal	41	54.7
Cesarean section	34	45.3
Place of previous delivery (n=75)		
Hospital	64	85.3
Home	11	14.7

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Table (3): Distribution of Teenage Mothers Regarding Previous Obstetric Complications**.**

Variables	**Number** (n=100)	
	No.	**%**
Presence of previous pregnancy complication (n=75)		
Yes	47	62.7
No	28	37.3
Types of previous pregnancy complication (n=47)		
Bleeding	16	34
Anemia	24	51.1
Abortion	21	44.7
Gestational DM	5	10.6
Pre-eclampsia	1	2.1
Previous stillbirth (n=75)		
Yes	10	13.3
No	65	86.7
Postpartum complications	**(n=75)**	
Yes	29	38.7
No	46	61.3
Type of postpartum complications (n=29)		
Postpartum hemorrhage	10	34.5
Puerperal sepsis	5	17.2
Perineal tear	13	44.8
Other (Infection)	1	3.4

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Table (4): Distribution of Teenage Mothers Regarding Current Obstetric History.

Variables	Number (n=100)	
	No.	**%**
Receive antenatal care (ANC)		
Yes	87	87
No	13	13
ANC visits (n=87)		
Regular	57	65.5
Irregular	30	34.5
Time of first antenatal care visit (n=87)		
Frist trimester	61	70.1
Second trimester	19	21.8
Third trimester	7	8
Mode of current delivery (n= 100)		
Normal vaginal delivery	60	60
Caesarean section	40	40
Planed pregnancy		
Yes	70	70
No	30	30
Reasons of unplanned pregnancy (n=30)		
Misuse of contraceptives	19	63.3
Husband pressure	7	23.3
Family pressure	3	10
Other (desire of mother)	1	3.4

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Table (5): Distribution of Teenage Mothers Regarding Maternal Outcomes in Current Pregnancy.

Maternal outcomes	Response			
	Yes		No	
	No.	%	No.	%
• Anemia	59	59	41	41
• Postpartum blues	46	46	54	54
• Problem in breast during feeding	45	45	55	55
• Obstructed labor	42	42	58	58
• Urinary tract infection	26	26	74	74
• Preterm labor	21	21	79	79
• Postpartum hemorrhage	20	20	80	80
• Oligohydrominious	19	19	81	81
• Spontaneous abortion	14	14	86	86
• Antepartum hemorrhage	13	13	87	87
• Premature rupture of membrane	13	13	87	87
• Gestational diabetes	12	12	88	88
• Placenta previa	11	11	89	89
• Pre-eclampsia	9	9	91	91
• Polyhydrominious	5	5	95	95
• Eclampsia	1	1	99	99
• Other problems (HIV-Cardiac disease)	8	8	92	92

* Number is not mutually exclusive.

Table (6): Distribution of Neonatal Outcomes in Current Study**.**

Neonatal outcomes	Response			
	Yes		No	
	No.	%	No.	%
• Hyperbilirubinemia	49	49	51	51
• Respiratory distress syndrome	30	30	70	70
• Neonate admitted to NICU	19	19	81	81
• Meconium aspiration syndrome	17	17	83	83
• Asphyxia	11	11	89	89
• Congenital anomalies	10	10	90	90
• Neonatal death	7	7	93	93
• A still birth	4	4	96	96
• Other health problems(Sepsis-Head trauma)	8	8	92	92
Causes of Neonate admission to NICU (n=19)				
• Pathological jaundice	9	47.4	10	52.6
• Sepsis	5	26.3	14	73.7

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• Head trauma	2	10.5	17	89.5
• Post neonatal death	2	10.5	17	89.5
• Intracranial hemorrhage	1	5.3	18	94.7

* Number is not mutually exclusive.

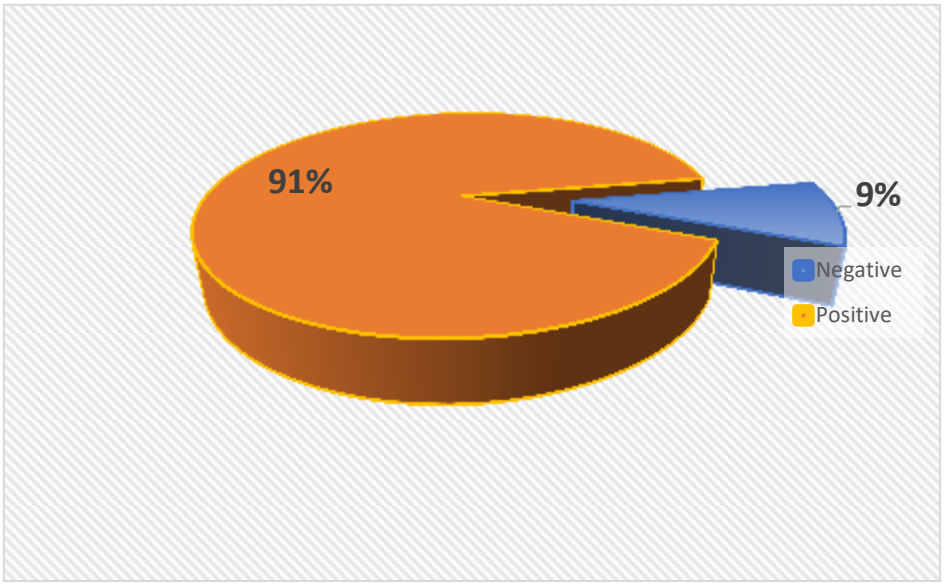

Figure (1): Distribution of Teenage Mothers' Attitude Level Regarding Causes and Consequences of Teenage Pregnancy.

Discussion:

Teenage pregnancy can bring about major health and social problems with unique medical and psychosocial consequences for the adolescent and society at large. For instance, it prevents teenagers from achieving their full potential and enjoying their basic human rights. The effect of teenage pregnancy also adversely affects future earning potential and leads to lifelong poverty. Such negative impacts continue throughout a teenager's entire life and carry over to the next generation ***(Govender et al., 2020).***

Above all, teenage pregnancy contributes to rapid population growth, especially in countries where contraceptive use is not well embraced like rural areas and increases individual lifetime fertility. Therefore, this study was designed to explore the maternal and neonatal outcomes of teenage pregnancy among teenage mothers at El-Fayoum university hospital.

Regarding demographic characteristics of the studied teenagers, the current study demonstrated that the teenagers' age was between 16 to 19 years .This result was congruent with a study by **Alyamani & Newira, (2021) that** entitled "Maternal and Neonatal Outcome of Teenage Pregnancy at Al-Galaa Maternity Teaching Hospital, Cairo, Egypt" who mentioned that the majority of teenagers' age was between 16 to 19 years.

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Concerning the age of marriage, the present study results showed that age of marriage of teenagers was between 14-19 years. This Study result agreed with a study conducted by **Letaru, (2023)** entitled "Factors Contributing to the Prevalence of Adolescent Pregnancy in Pajulu Sub County, Arua District**"** who reported that age of marriage of teenager were between 15-19 years.

As well, the present study results showed that nearly one quarter of teenage mothers were illiterate. This result agreed with a study conducted by **Eldaboly et al .,(2021)** who carried out a study about " Prevalence and outcome of teenage pregnancy among attendants of labor room in Bassion general hospital-Egypt (cross section study) " and reported that more than one quarter of teenager's mothers were illiterate. From the researcher point of view, this result may be due to the majority of the studied women were from rural area and this affect their level of education because most people in rural areas do not educate their children especially the girls and prefer to marry them at young age unlike the people in urban area.

Moreover, the current study results declared that the most of teenagers were housewife. This result agrees with a study conducted by **Eldessouki et al., (2020)** entitled "Assessment of The Impact of Teenage Pregnancy on Pregnancy Outcomeamong Pregnant Women in Minia University Hospitals, Minia Governorate" and they reported that the most of teenagers were housewife.

Regarding previous obstetric history of the studied teenagers, the current study demonstrated that more than two thirds of teenagers had 2 to 3 times of gravity. This result disagrees with a study conducted by **Ismail et al., (2022)** entitled "Rural Teenage Pregnant Female Unmet Needs" who reported that more than fifty of teenagers were primigravida.

The current study demonstrated that more than three fifth of teenagers had 1 to 2 times of parity. This result agrees with a study conducted by Jasim **et al., (2023)** entitled "Maternal and neonatal outcomes in adolescent pregnant women with one prior Cesarean section in Baghdad " and mentioned that more than fifty of teenagers had 1 parity.

Considering number of pervious abortions, the present study showed that more than half of teenagers had abortion. Conversely, a study conducted by **Ursache et al., (2023)** about "Epidemiology of Adverse Outcomes in Teenage Pregnancy-A Northeastern Romanian Tertiary Referral Center " and noticed that less than one fifth of teenagers had abortion.

The present study reflected that less than one quarter of teenagers had pervious preterm labor. This result agrees with a study conducted by **Indarti et al., (2020)** entitled " Teenage Pregnancy: Obstetric and Perinatal Outcome in a Tertiary Centre in Indonesia " and reported that less than one quarter of teenagers had pervious preterm labor.

Also, this result comes in line with a study conducted by **Abebe et al .,(2020)** who carried out a study entitled " Teenage Pregnancy and Its Adverse Obstetric and Perinatal Outcomes at Lemlem Karl Hospital, Tigray, Ethiopia, 2018 " and mentioned that less than one quarter of teenagers had preterm labor. The researcher believes this result may be due to maternal physical immaturity of the uterine and cervical blood supply in young mothers which leads to increase in prostaglandin production leading topreterm labor.

Concerning the mode of delivery, the current study showed that more than half of teenagers had normal vaginal delivery .This result is in agreement with a study carried out by **Alyamani & Newira, (2021)** entitled "Maternal and

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Neonatal Outcome of Teenage Pregnancy at Al-Galaa Maternity Teaching Hospital, Cairo, Egypt" and mentioned that more than two third of teenagers had normal vaginal delivery. Similarly, **Khaniya, (2021)** who carried out a study about "Maternal and Perinatal Outcome in Adolescent Pregnancies as Compared to Adult Pregnancies" also reported that half of teenagers had normal vaginal delivery .

Regarding previous obstetric complications, the current study represents that more than two third of teenagers had previous pregnancy complications. This result agrees with a study conducted by **Ismail et al., (2022)** entitled "Rural Teenage Pregnant Female Unmet Needs" and reported that more than one quarter of teenagers had previous pregnancy complications.

The present study declared that more than half of teenagers had previous anemia. This result agrees with a study conducted by **Lavanya& Jyothi, (2023)** entitled "Research on how socio-demographic factors affect teenage pregnancies and their fetal and maternal outcomes" and reported that more than nearly half of teenagers had previous anemia.

Regarding current obstetric history of studied teenagers, this current study revealed that the most of teenagers received antenatal care (ANC). This finding comes in line with a study by **Alyamani & Newira , (2021)** entitled "Maternal and Neonatal Outcome of Teenage Pregnancy at Al-Galaa Maternity Teaching Hospital, Cairo, Egypt" and mentioned that more than three fifth of teenagers received ANC. As well, the present study declared that two third of teenagers received regular ANC visits. this result disagree with a study conducted by **Lavanya& Jyothi,(2023)** entitled " Research on how socio-demographic factors affect teenage pregnancies and their fetal and maternal outcomes" and they reported that less than one quarter of teenagers received regular ANC visits.

In addition, the present study reflected that more than two third of teenagers started ANC in the first trimester. These results were compatible with **Diabelková et al .,(2023)** who conducted a study entitled " Adolescent Pregnancy Outcomes and Risk Factors " and mentioned that more than half of teenagers started ANC in the first trimester.

Regarding maternal outcomes of teenagers, the current study represents that more than one half of teenagers had anemia. This result was supported by study by **Lavanya& Jyothi,(2023)** entitled " Research on how socio-demographic factors affect teenage pregnancies and their fetal and maternal outcomes" who stated that nearly half of teenagers had anemia.

Similarly, **Vijayalakshmi, (2022)** who conducted a study about " Maternal and Fetal Outcome in Pregnancies < 21 Years: A Prospective Observational study " and reported that nearly two fifth of teenagers had anemia. The researcher believes that the anemia was the commonest problem between the studied women during pregnancy because during pregnancy there is a high demand for iron, especially in the adolescent girl because of the onset of menstruation, so risk for anemia increases when the adolescent girl becomes pregnant.

In addition, the present study displayed that nearly half of teenagers had postpartum blues. This result was consistent with a study conducted by **Abd-El-Kareem & Nasr-El-Deen,(2019)** entitled" Early Marriage and Associated Health Consequences amongFemale Children in Giza Governorate" and reported that half of teenagers had postpartum blues.

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Regarding neonatal outcome, the current study represents that nearly half of neonate had hyperbilirubinemia. Similarly, a study performed by **Naik et al., (2022)** about " Effects of Teenage Pregnancy on Obstetric and Perinatal Outcomes at a Tertiary Health Institution in Goa" and declared that more than two third of neonate had Hyperbilirubinemia

The present study reflected that more than one quarter of neonate had RDS. This result disagrees with a study conducted by **Abebe et al .,(2020)** who conducted a study entitled " Teenage Pregnancy and Its Adverse Obstetric and Perinatal Outcomes at Lemlem Karl Hospital, Tigray, Ethiopia, 2018 " and mentioned that less than one quarter of neonate had RDS.

As regard neonatal outcomes in current pregnancy, the current study illustrated that nearly one quarter of neonate admitted to NICU. This result was supported by **Eldaboly et al .,(2021)** who carried out a study about " Prevalence and outcome of teenage pregnancy among attendants of labor room in Bassion general hospital-Egypt (cross section study) " and found that one quarter of neonate admitted to NICU.

Concerning mothers' attitude regarding the causes and consequences of teenage pregnancy, the result of the present study showed that majority of teenagers had positive attitude towards causes and consequences of teenage pregnancy. This result agreed with a study by (**Bałanda& Pilewska, 2020)** that entitled " Attitudes of Teenage Mothers towards Pregnancy and Childbirth ''who reported that the majority of teenagers had positive attitude towards teenage pregnancy.

Conclusion:

The findings of the study support the notion that pregnancy before the age of 20 is considered a high-risk pregnancy with unfavorable outcomes for both the mother and infant. The study revealed that more than half of the teenage mothers and their children experienced significant complications, including anemia, obstructed labor, preterm labor, hyperbilirubinemia, respiratory distress syndrome (RDS), and low birth weight (LBW). These complications highlight the negative impact of teenage pregnancy on maternal and neonatal health. Additionally, the majority of the teenage mothers in the study displayed a positive attitude towards understanding the causes and consequences of teenage pregnancy on their overall health and pregnancy outcomes. This indicates that the participants recognized the importance of being aware of the potential challenges and implications associated with teenage pregnancy. Overall, this purposive study provides support for the research question.

Recommendations:

Based on the findings of this study the following recommendations are derived and suggested:

- Regulatory health education programs should be conducted for youth and their parents about the psychological, social, and medical hazards of early marriage and early pregnancy.
- Applying training courses for primary health care doctors, family physicians, and nurses about the proper support and appropriate dealing with teenage pregnancy.
- Paying attention to mass media campaigns to help raise public awareness about the risks and adverse outcomes of early marriage and teenage pregnancy.
- Pregnant teenagers are high-risk group requiring special medical attention to avoid adverse maternal and neonatal outcomes.

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Further research:

- Further larger studies should be held in different settings around Egypt. This will help researchers obtain a comparative model of different outcomes from different areas and governates generalized recommendations could be also obtained.
- Future studies should evaluate the associated factors explaining a higher incidence of adverse maternal outcomes among teenagers. Therefore, targeted antenatal and preventive programs can be arranged to prevent teenage pregnancies and its concomitant adverse outcomes.

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