



Association between Services of Antenatal Care and Health Complications among Mother and Newborn in Ranya District

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ABSTRACT

Background: globally maternal and neonatal mortality and morbidity identified as public health burden for this reason according to recommendation WHO 2016 guideline providing new model of antenatal care with adequate quality and number visits is responsible to decrease this risk among pregnant women and their neonates.

Objectives: objective of this study was to identify association between of antenatal care services with pregnancy outcome health status.

Methodology: this study employed quantitative design retrospective cohort study performed in Rania pediatric and maternal teaching hospital and 207 cases were collected. Questionnaire was consisted of demographic profile, antenatal care, maternal and neonatal health status information was constructed to collect data through interview technique face to face approach from 6 Jun to 7 July, a descriptive statistic used to assess frequency and percentage, inferential statistic chi square test applied to detect association between variables, the data analysis was done through statistical package for social science of software (SPSS V25).

Results: Results revealed that 99% of samples attended to antenatal care clinics, 80.6% initiated first visit in the first trimester and 69.6% performed 4 - 8 visits, moreover 47.8 % samples identified as perceived adequate care during pregnancy, and 50.7% mostly adequate care. furthermore results illustrate that There was statistically significant association between Services of antenatal care and newborn health status ($P = 0.029$), however there was no significant association with mother health ($P = 0.191$).

Conclusion: pregnant woman's awareness to attended antenatal clinics and services of ANC slightly high in this area so mothers with mostly adequate care had composed high proportion with no complication after delivery.

Keywords: Antenatal care, mother complications, newborn complications.

INTRODUCTION

Pregnancy is a state of alteration in physical and emotional situation even in pregnancy with uncomplicated state. Pregnant women's quality of life can be influenced by these change and impact both mother and infant health ⁽¹⁾.

Antenatal care (ANC) is an inclusive health observation of women from pregnancy period to before delivery, or it is planned supervision examination and giving health education guidance from preconception, pregnancy and postpartum period, the antenatal care services provide discovering complication effects mother and fetus health, furthermore giving advice about dangerous sign, nutrition, after birth family planning options ⁽²⁾.

Globally in most developing country maternal mortality is a significant public health burden as a result it is a human development main barrier, in 2005 because of pregnancy complication nearly half a million pregnant were died and pregnancy directly associated with 73% of the death, world health organization (WHO) estimated that in 2017 about 295, 000 women died at reproductive age 9.2% of this is associated with maternal reason (pregnancy and childbirth) ⁽³⁾.

Globally decreased antenatal care visits and stillbirth are more likely increased result in perinatal mortality, antenatal care is an important intervention for maternal and childbirth health successfulness, Inadequate antenatal care visits and attending less than 50% as recommended was related with adverse outcome of pregnancy ⁽⁴⁾.

Country to country antenatal care quality component was vary, The world health organization (WHO) conducted a set of services which involve patients history taking, physical examination, and laboratory investigation (blood test to check RH/ group, urine tests, for parasite infestation stool sample tested) also two tetanus toxoid vaccination recommended at least, moreover folic acid and iron

supplementation for nearly three month are recommended, and giving advice about rest, nutrition, complication readiness, child birth preparedness, postpartum care ⁽⁵⁾.

WHO recommend that antenatal care should be utilized in the first trimester of pregnancy with at least four visits, and optimally during pregnancy identify eight visits, specifically world health organization (WHO) advised pregnant woman's utilized visits during first 12 week of gestation with subsequent taking place contact at 20,26, 30, 34, 36, 38 and 42 week of gestation ⁽⁶⁾. the main objective of this study was to detect association between antenatal care services with maternal and newborn health status during 1st 24 hours.

AIMS OF THE STUDY

Objective of this study was to identify association between of antenatal care services with pregnancy outcome health status.

METHODOLOGY

Study design

The recent study was conducted through applying quantitative design, retrospective cohort study that is investigating purpose objective of this study it was perform in February to October 2022 at Ranya pediatric and maternal teaching hospital.

Setting of the study

The study was implemented in one hospital at Rania district with name Rania pediatric and maternal teaching hospital which is only governmental facilities provide delivery care for maternal and perform essential health services to their neonates.

Sample size

The sample size was calculated by using single population proportion formula for this study, it included $z^2 = \%95$ confidence level and equal 1.96, P is the prevalence of visiting antenatal care facilities

obtained in the result of previous study, d2 is the level of precession or sampling error and equal %5 (0.05), according to result of calculating formula 207 mothers meeting inclusion criteria to be participated.

$$\text{Sample size} = \frac{Z^2 \cdot p \cdot (1-p)}{D^2}$$

$$\text{Sample size} = \frac{1.962^2 \cdot 0.84 \cdot (1-0.84)}{0.05^2} = 207$$

Sampling and sample of the study

Non probability sampling, purposive sample comprised 207 women who had delivered either normal vaginal or C-section which admitted in postpartum wards in Rania pediatric and maternal teaching hospital, and they were attended or not attended antenatal care in government and Private sectors . Participants selected to get involved for data collection after agree to participate voluntarily in this study, they were interviewed and their records perused.

The study tools

In order to collect proper information relevant to object of this study a questioner was conducted, it was designed after intensive review of literature, instrument of data collection was constructed in a questioner based on depth review literature and WHO recommendation for pregnancy and post-partum period, moreover measure tools and questioners applied in prior related study. Closed and open-ended question were used for clarity to participants to asses appropriate their answers. Information of questioner comprised questions related with socio demographic characteristic, and antenatal care services include history taking, physical examination, health education, and laboratory investigation by using 77 item of questions with dichotomous scale (yes, no), and maternal complication during pregnancy, type of

delivery, complication during vaginal delivery, fetal health during labor and mother and neonate health status during 1st 24 hour in postpartum period.

Data collection technique

Questioner was conducted to collect data From mothers who meet inclusion requirement, and informed consent was attained from participants to enrolled in the study in postpartum ward in selected hospital, method of data collection was interview technique with face to face approach with each patients personally by researcher, the period were taken to collect data was from 6 June to 7 July 2022.

Data analysis

The questioner was cross-checked for consistency, completeness, and coded to enter into EPI info software7, IBM Statistical Software for Social Sciences (SPSS V.25) was applied for analysis purpose, table, text and figures were used for data presentation. descriptive analysis of respondents socio demographic characteristics and antenatal care information's was performed by frequency and percentage, however incidence maternal and neonatal health status during 1st 24 hour post-partum period were estimated in percentage, moreover possible association between quality of antenatal care and mother, neonate health status was assessed by chi- square test, A (P> 0.05) declare of statistical significances.

RESULTS

Socio- demographic characteristic and obstetric information:

Results in (table1) demonstrate that nearly less than half (32.4%) of study sample were at age between of (23 - 28) and (29 - 34), although only (4.3%) of respondents at age more than 41, furthermore the mean age was 30.36 with SD of 6.122 and the range of age was 28 years. Regarding educational status it was noticed that respondents' university graduation was concerned of (15.1%), and (32.7%) composed most of them with an incomplete

status of primary school graduate, furthermore (10.7%) were illiterate.

According to occupational status results elucidate that about (86%) of study sample were housewife, while only (1%) were student, moreover Concerning level of income more than half of participant (76.3%) represented by barley sufficient, although (1.4%) were in level of sufficient. additionally most of the participants were multi graved reported by more than half of them (80.2%), and high proportion of study subjects started first antenatal care visit in the first trimester of pregnancy represented by (80.5%).

Antenatal care visits information:

Information concerning antenatal care visits based on number visit, attended antenatal checkup, and quality care ,among study samples it was found that most of the study sample attended antenatal care visits to essential checkup reported by (99%), while only (1%) did not any attendance, in addition high proportion of study sample attained WHO recommendation for visits to ANC it was represented by (69.6%) had 4-8 visits to antenatal care, however only (1%) reported by those who had not visited, furthermore it was identified that most of the participants slightly (50.7%) achieved mostly adequate care during pregnancy, Results were shown in subsequent figures.

Association between services of antenatal care and mother health complications:

As it shown in table 2 result proved that there were no statistically significant ($P = 0.191$) between services of antenatal care and Health complications of mothers during 1st 24 hour, however mothers with no complication composed most of them with received mostly adequate care.

Table 3 describe relationship between antenatal care services and newborn health status during 1st 24 hour the result accepted a statically there was significant association between them ($P = 0.029$), in addition results of common health

complications and services of ante natal care association was also significant ($P = 0.004$).

DISCUSSION

Antenatal care is an essential component in obtaining pregnancy with positive pregnancy experience and decreasing mortality, morbidity on maternal, also the important pathway of this care was to provide normal health status for pregnant women and unborn child ⁽⁷⁾.

The study attempted to detect association between services of antenatal care on mother and newborn health status during the first 24 hour postpartum period in Rania districted.

Finding of this study demonstrate that most of mother's age between twenty three to thirty four years, high proportion of this age group might be related with the age of marriage, awareness of mothers about high risk pregnancy age as identified less than eighteen and more than thirty five years, furthermore birth interval considered as purpose. Regarding educational level results revealed that most of the study samples were in primary schools this was affected to lack of high educational graduate achievements it might be influenced by social, cultural, and personal beliefs, additionally families economic status revealed as one of the other factors. Concerning occupational status high proportion of study respondents were housewife these results found to be agreement with study done by ⁽⁸⁾ in Al-Dewaniyah.

In the current study it was justified that highest proportion of mothers attended antenatal visit reported by ninety nine percent, obtained result show higher participation if compared with some of trials ^(9, 10). in addition, women's during pregnancy started first antenatal care visit in first trimester it's comprised more than half of them, it is nearly similar as study performed by ⁽⁹⁾ in Ghana, while another study in Ethiopia detected that smaller proportion of study sample started in first trimester and nearly half of

them in second trimester ⁽¹¹⁾ this contrary could be accounted by Varsity in sample size, study population, and study design.

Furthermore, WHO recommendation for number visit were found in most of respondents participated with four to eight visits while if compared with results another study done by ⁽¹⁰⁾ in Somalia found that high proportion of study sample had one visit and least one performed four visit these differences it might be due to geographical region, awareness of pregnant women and health sectors services.

Results of ANC participation's in this area might be by reason of mother's experience with more than one pregnancy because study identify most of them were multi gravid woman's, furthermore woman's may had information about critical period of pregnancy to protect themselves from complication during pregnancy and childbirth, another aspect may associated with taking health advantage from good services of ANC provided by healthcare providers and governmental sectors might offer free or low cost health services.

Concerning service of ANC delivered to pregnant women the results in this study verified that services of ANC in this area at nearly high level this results are better than the outcome of another trails if compared ^(12, 13), this good services of care offer to pregnant women could be associate with many factors included good health care providers staff with appropriate level of information, available essential equipment and place sector either in private or government, and offering this services to afford healthy area and community away from disease with complication to reduce overworked among family, health sector, community, economic situation.

WHO recommended women's during pregnancy should had at least four-time visits to antenatal care from first trimester to perceive service for attained decreasing morbidity and mortality among maternal and neonates ⁽²⁾.

On association between services of antenatal care with maternal and neonatal health it was found that there is statistical significance between services of ANC and neonatal health while there was not statistically association with mother's health during first 24 hours.

Results was found that there is a negative statistically relationship between ANC services and mother complication included postpartum hemorrhage and retained product, otherwise mothers who receive mostly adequate and adequate care composed most of them with no complication and healthy, therefore factors could be related with this health complication might be due to psychological stress of mothers and fears about this new responsibility, furthermore possible due to their body's Physiology or by reason of medical process during delivery, further more mothers with health status could be accounted by receiving appropriate care during delivery and post-partum period. These findings were nearly in line with some of trails ^(14, 15).

According to association services of antenatal care and neonatal health status founding of the study support that there was statistical association between variable, mothers who receive mostly adequate and adequate care during pregnancy had higher proportion neonate with term and normal weight these results could be caused by providing essential health services for instance providing essential supplements like iron folic acid and other necessary vitamins also managing each condition made better to health and normal weight in addition preparing pregnant woman to labor process by identifying EDB through taking history of LMP and finding in ultrasound scan also measuring height and weight to ensure normal elevating of weight. This acquired results similar as study done by Tafere, T.E., et al ⁽¹⁶⁾.

Furthermore, by perceiving good services of care a small proportion of neonates has identified as preterm, low birth weight, still birth, preterm and

IUGR, macrosomia, besides this finding detected that there's also statistically association between common newborn health complication and services of antenatal care revealed in results small portion of newborn admitted in special care baby unit than others who had no complication. This might be results from recognize and control diseases or any abnormality as early as in pregnancy during visiting antenatal care to reduce risks on neonates. This finding were similar as results attained in study done in Ethiopia by ⁽¹⁷⁾.

Furthermore another study revealed association booked antenatal care and preterm birth only and finding quite same as of this study it was done by ⁽¹⁸⁾ in Lahore . In addition, another study result is moderately similar inside of stillbirth, low birth weight with antenatal care outcome it was done by Haftu A et all ⁽¹⁹⁾.

CONCLUSION

According to the present study results afforded some of confirmations involved services of antenatal care were in level of adequate, inadequate and mostly adequate care, moreover most of the study sample performed four antenatal care visits, furthermore there were statistically significant association between services of ANC and newborn health status but not statistically significant with mother's complication, however mothers who received most adequate care were composed most of them with no complication after delivery.

RECOMMENDATION

Pregnant women should receive more information through visits, social media, and special leaflets about health aspects during pregnancy, childbirth and postpartum to protect themselves from complications.

Strengthen services care of health sectors with well-trained health personnel, and available all essential equipment and place, and health system

provide primary care mobile clinics for providing health services to pregnant women far from health sectors.

It is essential to perform other research with a larger sample size to detect complications in pregnancy and pregnancy outcomes for conducting important resolution methods.

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Figures of Antenatal care visits information:

Figure (1): Attended to ANC

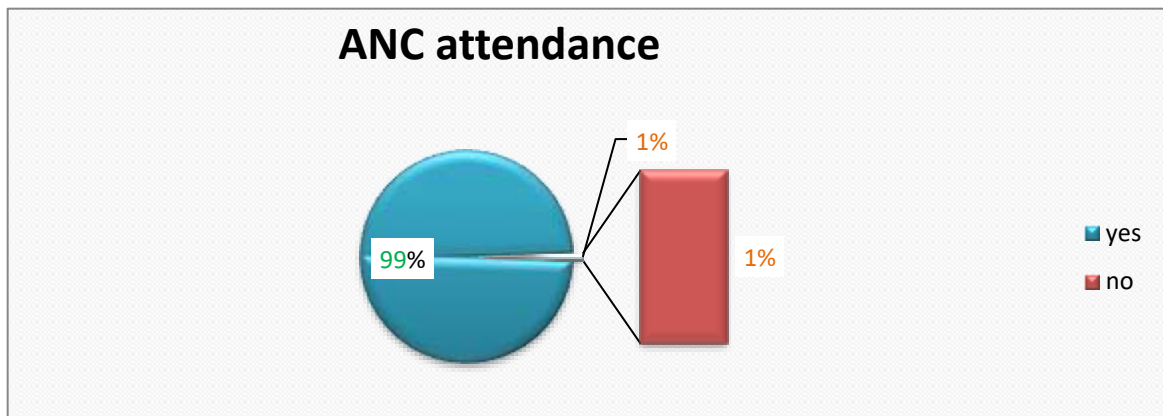


Figure (2): services of ANC

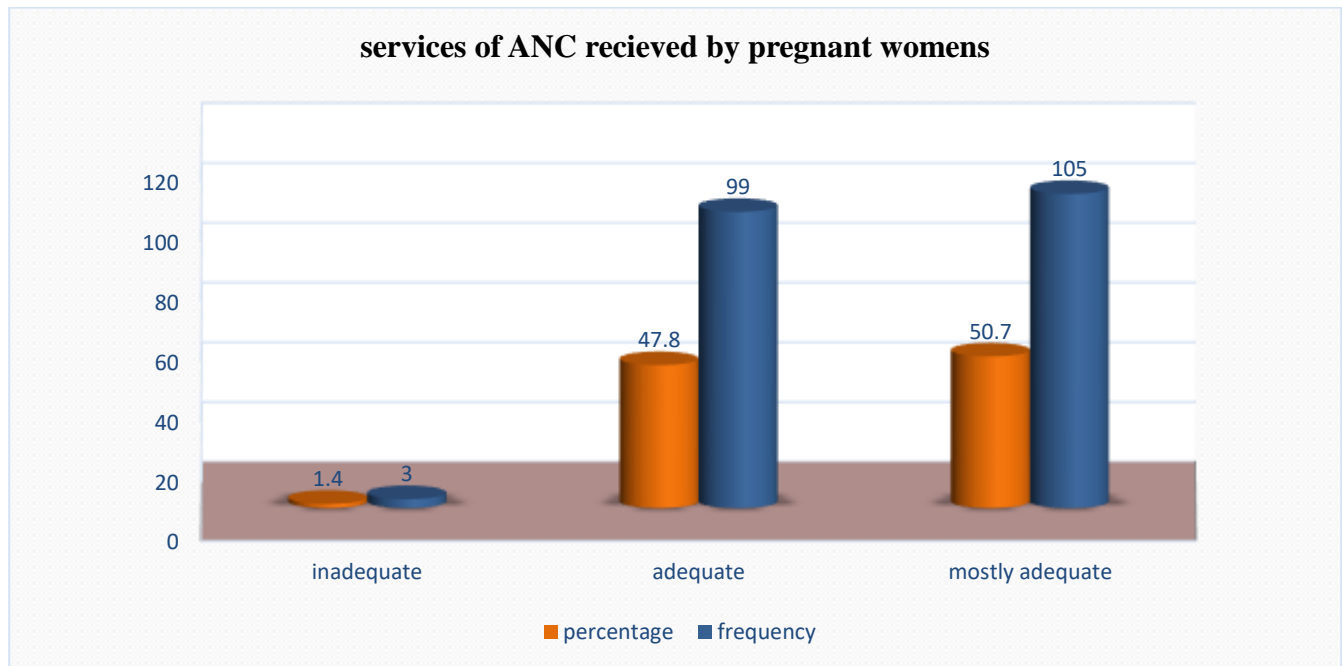


Figure (3): number of visits to ANC

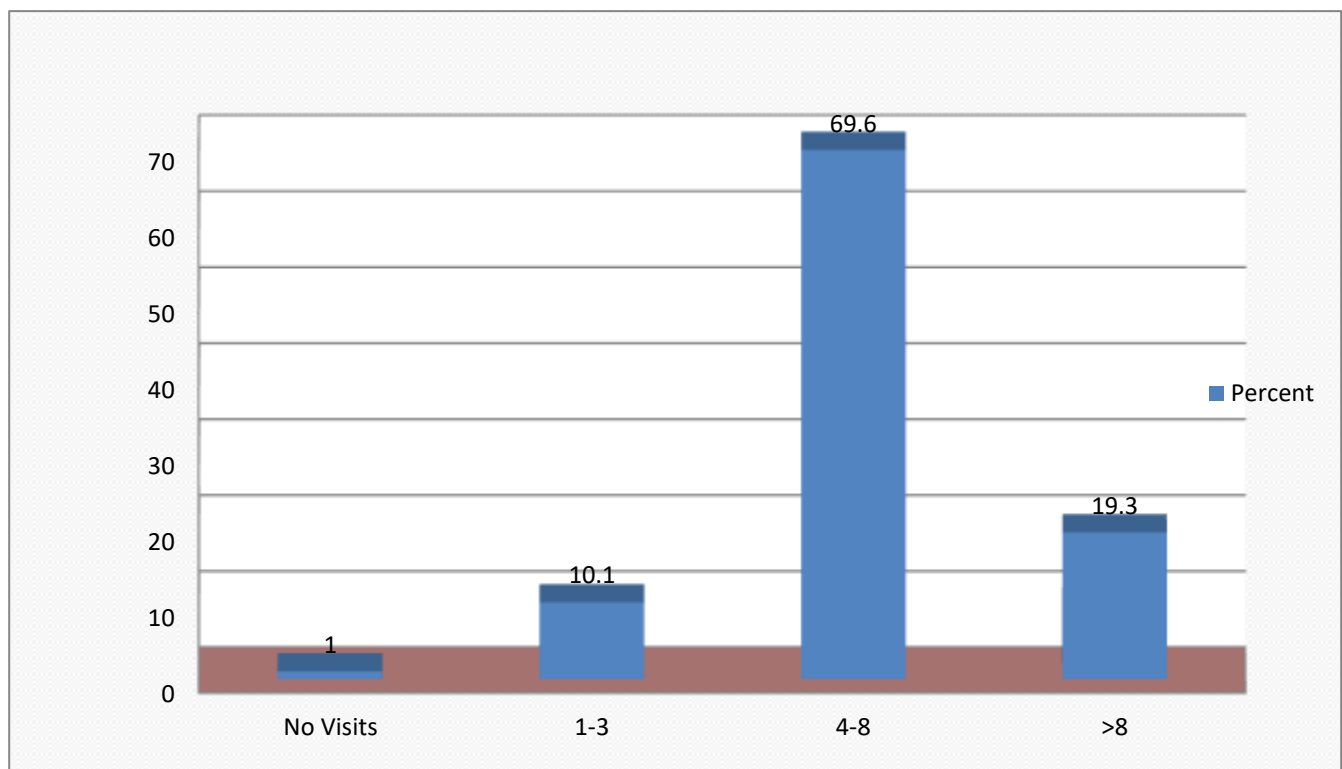


Table (1): distribution of Socio- demographic characteristic and obstetric information of study sample

Variable	Frequency	Percentage
Age group(years)		
17 – 22	20	9.7
23 – 28	67	32.4
29 – 34	67	32.4
35 – 40	44	21.3
41+	9	4.3
Mean+ SD 30.36 ,6.122		
Educational status		
Illiterate	22	10.7
Primary school graduate	67	32.7
Secondary school graduate	51	24.9
Institute graduate	34	16.6
University graduate	31	15.1
Occupational status		
governmental employ	20	9.7
Non-governmental employ	3	1.4
Self-job	4	1.9
Student	2	1.0
Housewife	178	86.0
Income level		
Sufficient	3	1.4
Barely sufficient	158	76.3
Insufficient	46	22.2
Gravidity		
Prim gravid	41	19.8
multigravida	166	80.2
first ANC visit		
1 st trimester	165	80.5
2 nd trimester	39	19.0
3 rd trimester	1	0.5

Table (2): association between services of antenatal care and mother health status during 1st 24 hour.

Variables	inadequate	adequate	Mostly adequate	Total	p-value
Retained product	0	3	0	3	
P.P. hemorrhage	0	6	3	9	0.191
None of them	3	90	102	195	(NS)

Table (3): Association between ANC services and neonatal health status during 1st 24 hours.

Variables	inadequate	adequate	Mostly adequate	Total	p-value
term and normal weight	1	74	92	167	0.029 (S)
term and low birth weight	1	3	3	7	
preterm birth	1	5	5	11	
still birth	0	4	0	4	
term and macrosomia	0	5	3	8	
post term and normal weight	0	6	0	6	
preterm and IUGR	0	2	2	4	
Common newborn complications					
SCBU admission	2	23	10	35	0.004 (HS)
no other complication	1	76	95	172	