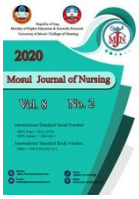
Mosul Journal of Nursing, Vol. 9, No. 2, 2021 (138-153)

Mosul Journal of Nursing

www.mjn.mosuljournals.com



Cost –Effectiveness of the nurses role in antenatal care programmer Implementation in Mosul city

Article information

Article history:
Received March 12, 2021
Accepted May 3, 2021
Available online July 4, 2021

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https://mjn.mosuljournals.com/article_168460.html

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Abstract

Pregnancy is not a disease, but it is a normal physiological process , it is associated with certain risks to health . Healthy survival of both the woman and the infant she bears is the aim of good antenatal care.

Antenatal care is a preventive method of care it has been shown to be beneficial and cost effective for a pregnant woman who receives in an adequate antenatal care otherwise more complications and poorer outcomes of pregnancy will appear. The cost of no A.N.C provided to a pregnant woman is substantially high with increased rates of complena complications like pre-eclampsia low birth weight infants both premature and growth retarded and prenatal deaths.

The present study aims to evaluate the cost–effectiveness of the current antenatal care provided by the nurse . A descriptive observational study was conducted in AL-Hadba primary health care center Mosul city from 1st of March to 30 April 2004, The study include 2 groups first (group A) examine by the doctor only (antenatal care without nursel . The doctor completed all information on the pregnant assessment card and physical examination for (100 women) measuring the time need by the doctor to complete this information in first and follow up visit .While was (2-7) min second (Group B) in antenatal care unit the investigator completed the information of pregnant card, gave advice and prepared (50 pregnant women) for physical examination. The time needed for the nurse to complete the information of pregnant card was (2-7) min.

Analysis of the information in (pregnancy assessment card) indicate non-significant differences in the information gained by both the doctor and the nurse , but the time spend by nurse could compensate that needed by the doctors for better services and (full pregnant assessment and healthily education). Aiming at reducing the complications such as

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hypertension which is most prevalent is one example of the cost –effectiveness of the squeal for missing a case of hypertension that will may be end in caesarean section is presented as (a case study).

In conclusion antenatal care should be appointed to a specialized nursing college graduate Nurse should be appointed in every antenatal care clinic to fulfill their nursing role during the reception & follow up of pregnant women who consulted the antenatal care the investigator thinks that it is very cost effectiveness to fulfill.

Introduction

The antenatal period extends from conception to the onset of labour. During this time care of the pregnant woman and her fetus focuses on maintaining health and preventing complications. The nurse must collect data about the family's physiological, psychological and socially adaptation to pregnancy and must provide teaching and counseling for the pregnant woman. (Leona, 1992).

Some Women may have scheduled examination with a physician ,nurse, or midwife, before becoming pregnant to obtain accurate reproductive life planning information and receive reassurance about fertility as much as can be given based on a health history, a routine physical examination and detect any problems that may need correction (Adele, 1999).

The duration of pregnancy is 40 weeks or 280 days from the last menstrual period. Term birth occurs after 37 weeks and before 42 weeks, preterm birth occurs before 36 weeks of gestation, but after viability is reached at about 20 to 24 weeks of gestation. Post term birth occurs after 42 weeks of gestation. There are three trimesters which are segments of the antenatal period each lasting approximately 13 weeks or 3 months(Paulette, et al., 2001).

Early and consistent A.N.C allows a going assessment of maternal and fetal will being detection of actual and potential problems and interventions to modify or correct pregnancy complications. Absent or inadequate A.N.C may result in suboptimal management of pre-existing or pregnancy-related conditions such as hypertension, diabetes and infections that could have a negative effect on pregnancy outcomes (Jacquely and Janice, 1993).

The major causes of death during pregnancy today are: ectopic pregnancy, and Hypertension. An important focus of all prenatal visits therefore is to screen for possible complications and danger sings such as bleeding or hypertension .At the first visit an extensive health history , a complete physical examination including a pelvic examination and manual pelvic measurements can be taken to determine pelvic adequacy and blood, urine specimens for laboratory work are obtained , (Nolan , 1997) .

Good A.N.C is not difficult and it does not require very expensive equipment. Many birth attendant mid wives and health care centers as well as hospitals can give this care and it can save many lives(Augusta, et al., 1997).

Maternal, mortality and prenatal mortality rates are unacceptably high in most developing countries in addition to the adverse effects on the families. Involved. These high rates are of serious concern to health workers, planners, political leaders and society as a whole. Most deaths during the vulnerable periods associated with pregnancy and childbirth occur because of a failure to recognize the seriousness of problems and to make use of available

services in good time together with poor health infrastructures. In addition, many deaths occur in "at risk" cases in which one or more of the conditions and characteristics considered to be risk factors are present. Fortunately, most risk factors can be dealt with, provided that they are diagnosed and managed in time (W.H.O, 1994) .

One very effective strategy for assisting staff in taking a more active role in evaluating the effectiveness of their approach to patient care is the utilization of site visits to units that deliver similar services to a similar population. (O'graty and Timporter, 1994) .

Every year approximately 200 million women become pregnant in developing countries, more than 500.000 of them will die of pregnancy related causes and millions will suffer a significant complication of pregnancy. In Addition, seven million prinatal deaths occur as a result of maternal health problems. To support the up grading of midwifery skills, so that countries can respond to this situation by strengthening maternal and newborn care services. (W.H.O, 1996) .

In developing countries many of maternal and antenatal are major causes of morbidity and mortality. In most of these countries, the resources available for health care are very limited and with a deteriorating economic situation, are likely to remain so. (W.H.O, 1991).

The nurses are important members of antenatal health care teams; they play a significant role in seeing that services include pre-conceptual care and that women are aware of the importance of early pregnancy care (Devonport, 1996) .

The concept of A.N.C care has grown progressively to become a universal component of obstetric care, not only in the developed world, but also in the developing countries. (Lulua et al ., 1998) .

Determining the cost-effectiveness of medical and public health prevention programmer is a prerequisite for funding by many decision makers responsible for allocating limited resources. Although cost benefit analysis and cost-effectiveness are the two common analytic approaches used today to achieve this objective, other models may prove equally effective regardless of the analytical method preferred. A definitive calculation of cost-effectiveness must be comprehensive and precisely quantify all the consequences (desirable and undesirable) of a strategy and alternatives. (W.H.O, 1991) .

In C.E.A. the costs are usually measured in monetary terms but the benefits are often measured in non - monetary terms. Common non-monetary units measured in health care include cases of disease prevented, years of life saved and days of morbidity or disability avoided.

Determination of cost-effectiveness is then based on the costs incurred by alternative programmer in achieving the same or highly similar types of non-monetary outcome. The programmer which produces a given non-monetary health outcome at the least cost, is the most cost-effective (W.H.O, 1991).

The objectives of the study:

1.To examine the role of the nurse in the A.N.C unit in Mosul city

2.To detect the most common problem emerging during the pregnant card assessment (common problem like Hypretension, aneamia Diabetes mellitus, etc) .

3.To evaluate the performance of the nurse in A.N.C (Case Study).

4.To compare the time needed to complete the information in A.N.C. , card between the doctor and the nurse.

Methodology:

Life is the most precious grace and cannot be measured in terms of money; however, decisions affecting health are not only made by doctors but they need sacrificing all the services and resources including nursing care, and nurses have an important role in the A.N.C assisting the doctors in such services aiming at optimum care and to evaluate such a role the following steps are followed.

Administrative Arrangement:

The permission of the ministry of health and the related departments were approved prior to the implementation of the study:

- Ministry of health approval (Appendix 1).

Department of Nineveh Health approval of the need for such work after presenting the protocol in special committee under the title of (Cost- effectiveness of the nurse's role in antenatal care programmer implementation in Mosul City) (Appendix 2).

Official permission to implement the study was obtained from AL- Hadba Center (Appendix 2).

Design of the Study.

A descriptive correlation study was carried out through the period (1March- 30 April 2004).

Setting of the Study:

AL- Hadba P.H.C.C was the focal point of this study. It is situated on the right side of the river Tigris in Mosul City. It started working in 1989.This center offers a wide range of P.H.C. services to the population in the catchments area. Maternal and child health services are considerably regarded as the main preventive services with its maternal clinic which looks after the pregnant woman from the start of pregnancy, until delivery and postpartum period. A.N.C clinic (the staff of which does not include a nurse for A.N.C) has many activities of which the most important is high risk screening follow up and referral (critical case) to regional hospital for further investigations and management.

The center medical staff consists of:

Administrative team

one Director (male doctor)

one assistant director (female doctor)

Six Drs. who supervise different procedures: gyn and ob. and medical procedure and all of them are doctors here in the A.N.C.

Four Pediatric. Drs.

Four general surgeon Drs.

One Orthopedic Dr.

There were no nurses controlled or attached to them.

Four Drs. who are dentists.

Four Nurses are controlled to look after vaccination, injection and dressing.

one male nurse college graduate.

The center consists of (10) rooms :

Three rooms for Drs.

One room for administration.

One room for a nurse.

One room library.

One room for dentist.

One room for reception and recorder and files.

One room for pharmacy.

Sample of the study:

The sample of the study consists of (150) pregnant women who were divided in to 2 Groups. 100 in the first Group (Group A).

50 in the second Group (Group B).

Data Collection:

Data collection was made by using the maternal registration card adopted by the Iraqi Ministry of health. This card was used for booking and follow up of the pregnant woman. (Appendix 3).

Subjects of the study:

a-Investigator evaluation of the steps followed by the doctor in charge during the examination of (100) patients consulting for A.N.C. of different stages of visits for the following aspects:

Checking the time spent by the doctor with each pt. Starting from completing the information on the maternal registration card to the point of giving treatment and advice. Checking the doctors' notes recorded on the maternal registration card after examination. Analysis of the procedure followed by the doctor during the examination of each patient. Pt.- Dr, communicating skills followed during the interview and examination of the patient.

b-Investigator role in completing the information on the maternal registration card to (50) pregnant during the first visit selected randomly (1 in 4) by the investigator prior to the examination by the doctor, then measurement of the time spent by the doctor during the management and examination of the same pt. . The time spent by the nurse is recorded

The Role of Nurse During the First Visit:

Complete the information in the maternal registration. It includes recording demographic data history about name, age, address, occupation, educational level, personal history and history of any disease, family history, past history, past obstetric history, medical history, menstrual history, and present pregnancy.

Measuring weight and height.

Measuring blood pressure.

Sending for investigation.

Giving advice to the pregnant woman about

1-Normal change on the body during pregnancy.

2- The importance of the regular visit to the P.H.C.C.

3- Taking vaccination (mother and baby).

4- Nutritional advice.

5- Rest, sleeping which is important according to the doctor's advice.

6- Using the tonic drugs and vitamins. Do not use any drug with the doctor's supervision.

7- Cleanliness of body, caring the dentition and consultation to dentist.

8- Consult P.H.C.C. for any complication during pregnancy.

9- Avoid smoking.

10- The importance of breast feeding and using the safe contraception in the future.

11- Fix for next visit.

Case Study:

After evaluation of the maternal registration cards the evident and commonest problem was selected by the investigator to evaluate the cost-effectiveness of missing such a problem and its impact on the pt., and or the community. Hypertension was chosen to be the commonest and serious problem to be studied.

Table 1. Demographic data of the samples

Demographic criteria		Group: A		Group: B	
		Number NO.	Percentage %	Number NO.	Percentage %
Age in years	15-24	45	45	25	50
	25-34	44	44	18	36
	> 35	11	11	7	14
Total		100	100%	50	100%
Duration of pregnancy	First	9	9	7	14
	Second	65	65	32	64
	Third	26	26	11	22
Total		100	100%	50	100%
Complete exam.		20	20		
Incomplete exam.		80	80		
Total		100	100%		
Give advice		44	44		
Not give advice		56	56		
Total		100	100%	50	100%

Sex: female (pregnant woman)

Table 2. Correlation between the age of the pregnant women examined by the doctor (group A) and the parity among of the sample.

Age (years) / No. Of parity	15-24		25-34		> 35		total	X^2	p-value
	No.	%	No.	%	No.	%			
0	28	62.2	8	18.1	1	9.0	37	22.641	0.000
1-2	15	33.3	16	36.3	4	36.3	35	0.100	0.951
3-4	2	4.4	14	31.8	4	36.3	2	12.487	0.002
5+	0	0	6	13.6	2	18.1	8	7.362	0.025
Total	45		44		11		100	31.092	0.000

Mean ± SD for the age and the No. of

parity = 1.56 ± 1.64, P = 0.001

Table (2) indicates H.S. results between the age and the No. of parity.

High number of pregnant women (62.2) in the age (15-24) with Non parity with increase of the age > 35 parity increase (3-4) 36.3.

Table 3. Correlation between the age of the pregnant women examined by the nurse and the party among of the sample.

Age (years) / No. of parity	15-24		25-34		35+		Total		X^2	P-value
	No.	%	No.	%	No.	%	No.	%		
0	19	79.0	5	27.7	1	14.2	25	50	13.887	0.001
1-2	5	20.0	6	33.3	1	14.2	12	24	1.441	0.486
3-4	1	4.0	4	22.2	1	14.2	6	12	3.331	0.189
5+	0	0	3	16.6	4	57.1	7	14	14.998	0.001
Total	25		18		7		50		23.868	0.001

Mean ± SD for the age and the No. of P. = 26.38 ± 6.67, 1.68 ± 2.46, P=0.00

Table (3) indicates S. Results between the age and the No. of parity.

Table 4. Correlation between the age and the NO. of pregnant women visits to the Antenatal care (group A)

Age (years) / No. of visit	15-24		25-34		35+		Total	X^2	p-value
	No.	%	No.	%	No.	%			
1-2	36	80.0	30	66.6	5	50.0	71	4.322	0.115
3-4	7	15.5	12	26.6	3	30.0	22	2.033	0.362
5+	2	4.4	2	4.5	3	27.2	7	3.055	0.217
Total	45		44		11		100	5.681	0.224

Mean ± SD for the age and the No. of visits = 26.22 ± 6.03, 2.13 ± 1.42, p = 0.166

Table (4) indicates non. S. results between the age and the No. of visit. High number of pregnant women in visit (1-2) (36) represents (80%) in age (15-24), while decrease the number of pregnant women in visit (5+) (2) represents (4.4%) in same age .and decrease visit of the number of pregnant women in other age. The mean + S.D for age

Table 5. Correlation between the No. of visits of the pregnant women visiting to the Antennal care clinic and complications (group A)

+ ve or – ve Complication / **No. Of visit**	Comp. +ve		Comp. –ve		Total	X^2	P-value
	No.	%	No.	%			
1-2	8	80.0	63	70.0	71	0.437	0.509
3-4	1	10.0	21	23.3	22	0.932	0.334
5+	1	10.0	6	6.6	7	0.154	0.695
Total	10		90		100	0.997	0.607

Table (5) indicates Non S. results.

High number of pregnant women (80%) had complication with number of visits (1-2) while decreased complication of pregnant women with more visits.

Table 6. Correlation between No. of visits of pregnant women visiting to the Antenatal care clinic and Abortion

Abortion +ve or –ve / No. of visit	A. +ve		A. –ve		Total	X^2	P-value
	No.	%	No.	%			
1-2	11	73.3	60	70.5	71	0.047	0.829

3-4	4	26.6	18	21.1	22	0.224	0.636
5+	0	0	7	8.23	7	1.328	0.249
Total	15		85		100	1.424	0.491

Table (6) indicates Non. S. results between No. of visits of pregnant women and abortion.
11 % of pregnant women visited the clinic (1- 2) and Abortion which represents (73.3%) while only 8.23 % of pregnant women visited the clinic > 5 with no abortion

Table 7. Correlation between the No. of visits of the pregnant women visiting to the Antenatal care clinic and stillbirth (group A)

Stillbirth +ve or –ve / No. of visit	Stillbirth +ve		Stillbirth –ve		Total		X^2	P-value
	No.	%	No.	%	No.	%		
1-2	3	75.0	68	70.8	71	71	0.032	0.857
3-4	1	25.0	21	21.8	22	22	0.022	0.882
5+	0	0	7	7.2	7	7	0.314	0.575
Total	4		96		100		0.318	0.853

Table (7) indicates Non. S. results between the No. of visits and presences or absence of stillbirth.
71% pregnant women who visited the clinic (1-2) had stillbirth while only 7 % of pregnant women who visited the Antenatal care clinic > 5 visits and had no stillbirth.

***Table 8. Correlation between the age and the type of Delivery* (group A)**

Age (years) / Type of D.	15 – 24		25 – 34		35+		Total	X^2	P-value
	No.	%	No.	%	No.	%			
0	27	60	7	15.9	1	9.0	35	22.657	0.000
N.V.D	17	37.7	34	77.2	9	81.8	60	16.911	0.000
Cls	1	2.22	3	6.8	1	9.0	5	1.425	0.700
Total	45		44		11		100	22.845	0.000

Table (4-8) indicate H.S. results between age and the type of Delivery.
Highly number of pregnant woman had N.V.D in age (25-34) (34) which represent (72.2%) while increase number of

pregnant woman had cls in the same age (3) which represent (6.8%).

***Table 9. Correlation between the age of the pregnant women and the Type of delivery* (group B)**

Age (years) / Type of D.	15-24		25-34		35+		Total		X^2	P-value
	No.	%	No.	%	No.	%	No.	%		
0	18	72.0	5	27.7	0	0	23	46	15.173	0.001
N.V.D	7	28.0	6	33.3	5	71.4	18	36	4.563	0.102
Cls	0	0	7	38.8	2	28.5	9	18	11.339	0.003
Total	25		18		7		50		20.412	0.000

Table (9) indicates H.S results between the age and the Type of the delivery.
28 % of the age (15 – 24) and 33 % of the age (25 – 34) had N.V.D. while C/S 38.8 % in the same age and 28 % of the age > 35 no of the age 15-24 and had C/S.

***Table 10. Correlation between the age of the pregnant women and still birth* (group A)**

Age years / Stillbirth	15-24		25-34		35+		Table
	No.	%	No.	%	No.	%	
(0) – ve	43	95.0	42	95.4	11	11.0	96
(1) + ve	2	4.4	2	4.2	0	0	4
Total	45		44		11		100

$X^2 = 0.516$, P – value = 0.773, d – f = 2

Table (10) indicates Non S. Results with all the age groups

***Table 11. Correlation between the age of the pregnant women and stillbirth* (group B)**

Age (years) / No. of Stillbirth	15-24		25-34		35+		Total	
	No.	%	No.	%	No.	%	No.	%
-ve	24	46.0	16	88.8	5	71.4	45	90
+ve	1	4.0	2	11.11	2	28.5	5	10
Total	25		18		7		50	

X^2 = 3.707, P-value = 0.157
Table (11) indicates Non. S. results.

***Table 12. Correlation between the age of the pregnant women and Abortion*(group A)**

Age years / No.of Abortion	15-24		25-34		35+		Total	X^2	p-value
	No.	%	No.	%	No.	%			
0	43	95.5	33	75	9	81.8	85	7.471	0.024
1-2	2	4.4	9	20.4	2	18.1	13	5.335	0.064
> 3	0	0	2	4.5	0	0	2	2.597	0.273
Total	45		44		11		100	8.308	0.081

Mean ± SD for age and No. of Abortion = 0.22 ± 0.60, P=0.11
Table (12) indicates Non S. results.
High pregnant women in the age (25-34) with increased number of abortion (1-2) and > 3 are 20.4 % and 4.5 % respective (9) which represents (20.4%) and in the same age with number of abortion (3+) (2) which represents (4.5%) while decreases the number of pregnant women in the age (15-24) with the number of abortion (1-2) (2) which represents (4.4).

***Table 13. Correlation between the age of the pregnant women and Abortion* (group B)**

Age (years) / No. of A.	15-24		25-34		35+		Total		X^2	P-value
	No.	%	No.	%	No.	%	No.	%		
0	23	92.0	13	27.2	5	71.4	41	82	3.390	0.184
1	2	8.0	3	16.6	2	28.5	7	14	2.088	0.352
2+	0	0	2	11.1	0	0	2	4	3.704	0.157
Total	25		18		7		50		5.962	0.202

Mean ± SD for the age and No. of Abortion = 0.24 ± 0.59, P= 0.036
Table (13) indicates non S. Results.

***Table 14. Correlation between the age of the pregnant women and complications* (group A)**

Age (years) / **Complication** / **+ve or –ve**	15-24		25-34		35+		Total
	No.	%	No.	%	No.	%	

Comp +ve	3	6.6	6	13.6	1	9.0	10
Comp –ve	42	93.3	38	86.3	10	90.9	90
Total	45		44		11		100

$X^2 = 1.212$, P – value = 0.545

Table (14) indicates Non S. results between the age and the presence or absence of complication. In the age (25-34) which represents (13.6%) while in age (15-24) which represents (6.6%) and in the age (35+) which represents (9.0%).

***Table 15. Correlation between the age of the pregnant woman and complication*s (group B)**

Age (years) / complication +ve or –ve	15-24		25-34		35+		Total	
	No.	%	No.	%	No.	%	No.	%
Comp. +ve	1	4	1	5.5	1	14.2	3	6
Comp. –ve	24	96	17	94.4	6	85.7	47	94
Total	25		18		7		50	

$X^2 = 1.036$ P-value = 0.596. Table (15) indicates Non. S. Result.

Table (13) correlation between age and No. of A. Correlation between age and No. of A.

Table 16. Time measurement between 2 groups (Doctor's group (A) and Nurse group (B)).

G. A		G. B		*P-value
No.	Mean ± SD	No.	Mean ± SD	
100	4.07 ± 1.15	50	3.76 ± 1.56	0.216

* z – Test of two means were used

min – max ⟶ 2 groups

2 – 7 ⟶ A

2 – 7 ⟶ B

Table (16) indicates Non. S. results between time measurement in the 2 groups (A and B).

Discussion the results:

A.N.C has been a feature of health care system for the last century, With a large amount of public health funding invested in programs which suggest that a woman with an apparently normal pregnancy should see her health care providers on an average of (10-12) times during her pregnancy.(Michael et al ., 2004)

W.H.O. estimated that every year 585000 women, many only in their teens, die from causes related to pregnancy and child birth (Unicef , 1997).

This means that in each day more than 1000 women die due to complications of pregnancy and child birth (Unicef , 1993).

The term cost may mean minimum expenditure to produce a given bundle of output. It can be very difficult to determine whether a health care has been operating efficiently or not, and what its costs would have been if it had been managed efficiently. Health care center output

consists of improving or maintaining the patient's state of health on the one hand and the capacity to satisfy an option demand on the other hand. (Peter and Friedrich, 1997).

In the present context, it seems appropriate to list various indicators of P.H.C.C activity and to classify them according to the stage of production from an economic perspective the indicators most commonly used are. Peter and Friedrich (1997).

- Quantities of individual medical and nursing services performed (examinations, operations, medications, injections physical therapies temperature measurements, meals, etc.)
- Quantities of factors of production **(hours work)** by physicians, by the nursing staff and by other employees drugs and dressing, electricity, fuel, etc.)
- The number of patient days, possible differentiated according to intensity of care.
- The number of patients. (Or cases) treated, possibly differentiated according to various types of disease.

Nurse's Role in A.N.C:

- In Al-Hadba P.H.C.C there were three nurses available. They are responsible for vaccination, dressing and injection, but no nurse was appointed to the A.N.C, and that is why the nurse's role is performed by the Doctor, which makes a heavy burden on the Doctors who run the A.N.C.
- The Doctors in Al-Hadba Centre are responsible for completing the information on the pregnant card,
- Examining and managing the cases accordingly, the investigator measures the time needed by the Doctor. During the examination of (100) pregnant women group (A) the mean time appears (4.07) ^{min}. The investigator also completed the information of another (50) pregnant cards and checking the time which is needed turns to be (3.76) ^{min}. Then the investigator prepares the pregnant woman to the Doctor for further examination and management of each case.
- In fact the patient will feel satisfied when she receives good care.

Demographic Criteria:

- In Al-Hadba P.H.C.C. (group A and B) (86 – 89 %) of A.N.C attenders were below the age of 34 years (group A and B) and (64 – 65 %) of them were in their second trimester, but (9-14%) was in the first trimester (table 1). (37-50%) of the sample were primigravida and the rest were multipara (table 2).
- The results are in accordance with the demographic data of (Hildingsson and neineisen's) study. Cost – Effectiveness gives the best quality of care for these young inexperienced pregnant women and for their infants, otherwise poor output results increase the burden on the resource of community health care.

The A.N.C Visits:

- The number of pregnant women in poor countries receiving A.N.C during pregnancy increased by 20% during 1990 – 2001 but greater efforts are needed to improve services especially in rural areas (W.H.O report and unicef).(Internet , 2004)
- Women had high expectation of A.N.C in terms of possibilities of preventing fetal morbidity, a result that may reflect worrying about the baby’s health rather than a realistic assessment of the potential of A.N.C procedures. (Ingegere et al ., 2002) .
- Studies from Jamaica (McCaw, 1995) and U.S.A (Ahmed, 1990) found that an adverse pregnancy outcome was associated with more Antenatal visits in the following pregnancy. This may indicate that the pregnant woman believes that she can benefit from attending A.N.C
- W.H.O recommends that A.N.C should consist of at least four visits with a doctor, nurse or midwife during pregnancy. The examination includes blood pressure measurement, testing of urine for bacteriuria and proteinuria, blood tests to detect syphilis and severe aneamia. At least, 50% of women reported four on more visits in 33 of the 45 countries surveyed, but the report notes that there were major exceptions.
- In Bangladesh, Ethiopia, Morocco, Nepal, and Yemen many women received only one visit. Overall 70% of

women world-wide have at least one A.N visit. It said with coverage being a high 98% in rich nations and a round 68% in poor nations with the lowest in south Asia at 54%. (Internet, 2004).

- 80 % of the pregnant women the age (15 – 24) years attended Al-Hadba P.H.C. C. for not more than two visits, while 20 % of the pregnant women > 35 years of the age had more visits (5+) (table 4).
- Table (5) shows fewer visits of the pregnant women of whom (80%) was associated with complications because of the in decrease the A.N.C received while more visits (5+) of the pregnant women (6.6%) were associated with less complication. Michael (2004) in his study stated that lack of A.N.C is associated with a significant number of poor pregnancy outcomes which are not explained by the basic epidemiological characteristic of women. During this assessment it was noted that abortion correlated inversely with the number of visits, and 15 % of this sample had abortion. 73 % of them were visited to the clinic (1-2) times, while those with more visits to the clinic (5+) and no abortion (table 6) .This is in accordance with Hildingsson's (2002) results which are in accordance with the finding of this study in relation to the importance of frequent A.N.C. visits and decrease the number of pregnant women having a stillbirth (table 7), 60 % of all the samples had N.V.D. and only 5 % of them had C/S .The correlation of the type of delivery with the age, although it is non- significant, a few of younger age group needed C/S .This study revealed the following cases among (150 pregnant women) 14 c/s, 13 complication (10 hypertension, 1 aneamia, 1 A.P.H . 1 Premature labour) . (table 8) and this finding is in accordance with (Michael , 2004) study. The correlation between the age of the pregnant women and the pregnant women of having stillbirth was also looked at in this study where 9 % of the samples had stillbirth (table 10 and 11).
- The correlation between the age of the pregnant women and the complication (hypertension, anemia, A.P.H.) increases the complication with the age > 35 years 9 % and 14 .2 % of the pregnant women who had complication in group (A) and group (B) then. The outcomes of their pregnancy were disappointing (table 14 and 15) in contrast to (Hildingsson 2002) study.
- The younger age group of the pregnant women (15 – 24) years seems to have less abortion as compared to the age of the pregnant women > 35 years old (table 12 and 13). This could probably be due to the fact that the high risk of the pregnant women is old age.
- The minimum and maximum time for the group (A) and group (B) is (2 – 7) min. it is Non- significant results because the No. of group (A) is (100 of the pregnant women) while group (B) is (50 of the pregnant women). (table 16).

Case Study (Cost of treating a pregnant woman with Hypertension):

- Hypertensive is a disorder in pregnancy, and particularly pre-eclampsia remains the major causes of maternal and prenatal mortality (Ahmed, 1990) accounting for 15% of maternal deaths and 4% of prenatal deaths. Therefore, the key aim of modern antenatal care is the timely detection and management of pre-eclampsia. (Villar and Bergsjop., 1997).
- A traditional belief is that this is best achieved by regular, and increasingly frequent antenatal visits, allowing for both blood pressure measurement and dipstick urinalysis to detect new-onset proteinuria. (Brown, et al ., 2000) . The skills specific to preventing and managing eclampsia include identification of risk factors for pre eclampsia and eclampsia mid -wifery and nursing care and observations during fit.
- The presence of a full health team in the A.N.C, means providing the best quality of care for the pregnant women. Quality of care means doing the right things right, obtaining the best possible clinical outcome, satisfying all customers, retaining talented staff and maintaining sound financial performance.(Hunt and Lumley , 2002) .
- Quality of care is the sum of its four component parts, technical quality (measured by patients, health status

improvement), resources consumption (measured by the costs of care), patient satisfaction (measured by patient perception of the subjective or interpersonal aspects of care), values (measured by the acceptability of any trade-offs that must be made among the previous three outcomes). (Leebov, 1991).

- Most users of A.N.C services are well. Some of them will develop conditions requiring higher level of care; most of these conditions are unpredictable and life threatening. (Wilson and Gold, 1995).
- The investigator in this study examinal (150 pregnant women). Notice that 13% pregnant women presented with some complications which could be life threatening on the pregnant woman and or her baby of these according to their frequency were (10% hypertension, 1% aneamia, 1% A.P.H. 1% still birth) severe hypertension eventually end in C/S. The presence of A.N.C nurse (specialized nursing care) satisfied the A.N.C doctors with the care she provides to the pregnant woman, and in preparing the woman for the medical care provided by the Doctor. During this time (3.76 min) the nurse spend in assessing the pregnant woman the doctor could make the best of use her time (4.07 min) with the pregnant woman in evaluating educating the client this process will eventually end up in the best quality of care. Without the nurse the investigator recognize the burden of pregnant women or consulting the doctor that create unsatisfactory state of pregnant woman and management, this is the reason which allow the doctor for examine fully only 20 out of 100 pregnant woman as the model below clarify (demographic data).

The Recommendations and Suggestions:

1.Establishing specialized nursing care services in the A.N.C.

2.Education and training courses for all nurses servicing in the A.N.C. as part of continuing.

3.Providing the necessary medical equipment and technical aids which are necessary for the provision and full A.N.C and nursing services like ultrasonography, sonic aid full laboratory services.

4.Concentration on the high risk pregnant woman through continuous medical and nursing care and supplying them with special handouts about normal and complicated pregnancy.

5.Further proper studies on Cost-Effectiveness of the A.N.C.

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