Pattern of Utilization of Maternal Health Care Services at Benha District, Qalyubia Governorate

Thesis

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List of Contents

List of Acronyms and Abbreviations

ANC	Ante Natal Care
ARV	Antiretroviral drugs for HIV/AIDS
ASB	Asymptomatic bacteriuria
BP	Blood Pressure
DECIDE	Developing and Evaluating Communication strategies to support Informed Decisions and Practice based on Evidence
ECV	External cephalic version
EDHS	Egypt Demographic and Health Survey
EDD	Estimated date of delivery
EHDR	Egypt Human Development Report
EPI	Expanded programme of immunization
FANC	Focused antenatal care
HB	Hepatitis B
HIO	Health Insurance Organization
GDM	Gestational diabetes mellitus
GDG	Guideline Development Group
HIV	Human Immunodeficiency Virus
IPTp	Intermittent Preventive Treatment for malaria during uring pregnancy
IPV	Intimate partner violence
ITN	Insecticide Treated bed Net
IUD	Intra uterine device
MCH	Maternal and Child health
MDGs	Millennium Developmental Goals
MHS	Maternal health services
MMR	Maternal Mortality Ratio

MOHP	Ministry of Health and Population
NCC-WCH	National Collaborating Centre for Women and Children Health
PHC	Primary Health Care
PITC	Provider-initiated testing and counseling
PLA	Participatory learning and action
PrEP	Pre-exposure prophylaxis
RCT	Randomized Controlled Trials
Rh	Rhesus factor
SEH	Symphysis fundal height
SES	Socio-economic status
SPSS	Statistical Package of Social Science
STIs	Sexually Transmitted infections
TBAs	Traditional Birth Attendants
TB	Tuberculosis
TDF	Tenofovir disoproxilfumarate
TT	Tetanus toxoid
UN	United Nations
UNGA	United Nations General Assembly
UNICEF	United Nations Children's Fund
USA	United States of America
UTI	Urinary Tract Infection
WHO	World Health Organization

List of Tables

List of charts

List of figures

ABSTRACT

Background: Poor utilization of maternal services has constrained Egypt-as one of the developing countries-from meeting targets of United Nations Millennium Developmental Goals (MDGs). Antenatal care is the critical element for providing different services which are critical for maternal survival and reducing maternal mortality.

Aim: To identify pattern of utilization of maternal health services at Benha district in order to promote adequate maternal health care among women in there.

Study design and Methods: Descriptive cross sectional comparative study. An interview questionnaire was used. Convenient samples of women who attended at the selected health center and health unit at Benha district who were married and pregnant or had experienced birth were included (65 women selected from Gamgra center and 335 from Benha MCH).

Results: Most of the studied women (100% urban and 98% rural) had regular ANC (more than 4 visits) and started ANC visits early in the first trimester (100% urban and 72% rural). Nonetheless, the role of PHC in providing ANC was very low (10% in urban and 22% in rural women) if compared to private clinics (90% in urban and 78% in rural women). Study women perception regarding ANC was generally good (99.5% of the studied women perceived its importance). Lack of enough services prevented 95% of the urban women and 78% of the rural women, unavailability of physicians prevented 25% of the urban women and 71% of the rural women

from utilization of PHC services. Nearly half of the studied women both in urban and rural who utilized PHC complained from long waiting time for the physician.

Conclusions: The utilization of primary health care (PHC) for ANC was limited (10% among urban and 22% among rural women) due to many unsatisfactory factors at the PHC services like lack of enough services and unavailability of physicians.

Recommendations: More efforts are needed to promote the role of PHC in ANC provision through provision of the basic effective components of ANC, availability and training of the health care personnel, improving the system needed to get the dropout pregnant females.

Key words: Antenatal care, Benha, utilization pattern.

INTRODUCTION

At the beginning of the new millennium, world leaders gathered at the United Nations to shape a broad vision to fight poverty in its many dimensions. That vision, which was translated into eight Millennium Development Goals (MDGs). Improving maternal health is the fifth goal and it is a very valuable one. Since 1990, the maternal mortality ratio has declined by 45 per cent worldwide, but most of the reduction has occurred since 2000. In Northern Africa, the proportion of pregnant women who received four or more antenatal visits increased from 50 percent to 89 percent between 1990 and 2014 (***Ban Ki-moon, 2015).***

Poor utilization of maternal services has constrained Egypt as one of the developing countries) from meeting targets of United Nations MDGs ***(Finlayson and Downe , 2013).***

Utilization means the action of making practical and effective use of something. Every year, at least half million women needlessly die from complications during pregnancy, labour and puerperium all over the world. According to WHO report, the Egyptian maternal mortality ratio continues in the high range of 33/100000 live births ***(WHO et al., 2015).***

Deaths mainly are due to hemorrhage (32% of maternal deaths), sepsis (12% of maternal deaths) eclampsia (6% of maternal deaths), abortion, complications of obstructed labour , lack of knowledge and preparedness about reproductive health and

inadequate numbers and poorly skilled health care providers ***(Agus and Horiuchi S, 2012 and Fortney et al., 1988).***

Antenatal care (ANC) is the critical element for providing different services which are critical for maternal survival and reducing maternal mortality ***(Ye et al., 2010).***

Many studies around the world had identified the most important barriers for utilization of maternal services, like low awareness, great distances, high costs and poorly functioned services ***(Memon et al., 2015).***

Financial barriers were the most important which prevent about 42 % of the women from consulting a doctor in an Egyptian study carried out in Upper Egypt in 2013, physical barriers (long distance and insufficient means of transportation) prevented about 30% of the women , and finally personal and cultural barriers prevented nearly one quarter of them ***(Chiang et al., 2013).***

These barriers may be quietly different from barriers expected to be found in Lower Egypt. This could be attributed to different cultures, traditions, beliefs, socio-economic and educational levels. So we hope by conduction of this study to reveal these differences to be a cornerstone for other studies aiming to overcome these barriers in the future.

Rationale:

To ensure adequately provided ANC health services, it is logical to investigate at first the pattern of its utilization. In Egypt, although several studies have been done focusing ANC services, studies dealing with this issue in Qalyubia governorate (a community known with its high fertility motives ***(EHDR, 2010)***), have not been yet well accomplished.

Research Questions:

The research questions regarding the study women include:

- What was their utilization pattern of the ANC services?
- Was there a difference between their ANC perception and actual utilization?
- What are the factors that shaped their ANC utilization pattern?

AIM OF THE WORK

Goal: To promote adequate maternal health care services utilization among women at Benha district.

Objective: To identify pattern of utilization of maternal health services at Benha district.

Sub objectives:

1. To determine women's socio-demographic factors like age, living condition, education, income, mean of transportation to health care facility and how far it is from the female.
2. To outline the barriers to maternal health services utilization.
3. To determine knowledge & attitude level towards maternal health care.
4. To identify women's autonomy.

Chapter 1: Antenatal Care

The Definition of antenatal care has been developed over years:-

Antenatal care is a preventive obstetric health care program aimed at optimizing maternal fetal outcome through regular monitoring of pregnancy ***(MOHP, 2005).***

Antenatal care is the care provided by skilled health-care professionals to pregnant women and adolescent girls in order to ensure the best health conditions for both mother and baby during pregnancy ***(WHO et al., 2007).***

The provision of special care for pregnant women through the public health services was a relatively late development in modern obstetricsas systemized screening programs for prenatal care were introduced in Western Europe at the beginning of the 20th century ***(Downe et al., 2009).***

Regular antenatal care wasn't introduced until the late 1930s by United Kingdom of Great Britain and Northern Ireland ***(Abou-Zahr et al., 2003).***

ANC utilization has increased since the introduction in 2002 of the WHO ANC model, known as focused ANC (FANC) or basic ANC, which is a goal orientated approach to delivering evidence-based interventions carried out at four critical times during pregnancy. However, globally, during the period 2007–2014, only 64% of pregnant women attended the WHO-recommended minimum four contacts for ANC, suggesting that much more work

needs to be done to address ANC utilization and quality ***(WHO, 2016)***.

The WHO has defined maternal mortality as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental cause ***(WHO, 2016).***

Maternal mortality is unacceptably high; About 830 women die from pregnancy- or childbirth-related complications around the world every day. It was estimated that in 2015, roughly 303,000 women died during and following pregnancy and childbirth. Almost all of these deaths occurred in low-resource settings, and most could have been prevented ***(Alkema et al., 2016).***

The high number of maternal deaths in some areas of the world reflects inequities in access to health services, and highlights the gap between rich and poor. Almost all maternal deaths (99%) occur in developing countries. More than half of these deaths occur in sub-Saharan Africa and almost one third occur in South Asia. More than half of maternal deaths occur in fragile and humanitarian settings. There are large disparities between countries, but also within countries, and between women with high and low income and those women living in rural versus urban areas ***(Say et al., 2014).***

The maternal mortality ratio (MMR) (the number of maternal deaths per 100,000 live births) in developing countries in 2015 is 239 per 100,000.live births versus 12 per 100,000 live births in developed countries ***(WHO, 2016).***

In sub-Saharan Africa, a number of countries halved their levels of maternal mortality since 1990. In other regions, including Asia and North Africa, even greater headway was made, the global maternal mortality ratio declined by only 2.3% per year between 1990 and 2015. However, increased rates of accelerated decline in maternal mortality were observed from 2000 onwards ***(Bustreo et al., 2013).***

Between 1990 and 2015, maternal mortality worldwide dropped by about 44%. Between 2016 and 2030, as part of the Sustainable Development Goals, the target is to reduce the global maternal mortality ratio to less than 70 per 100 000 live births ***(Gilmore and Gebreyesus, 2012).***

A woman's lifetime risk of maternal death – the probability that a 15 year old woman will eventually die from a maternal cause – is 1 in 4900 in developed countries, versus 1 in 180 in developing countries due to higher rate of pregnancies in the later one and this gives us an idea about the breakdown health systems in developing countries ***(WHO, 2016)***.

According to recent United Nations maternal mortality estimates, Egypt has reduced its maternal mortality ratio to 33/100,000 live births in 2015 compared to 45/100,000 in 201 , 55/100,000 in 2008 ,75/100,000 in 2000 and 120/100,000 in 1990. Regional differences are present, with MMR being lowest in urban governorates and highest in frontier governorates ***(WHO et al., 2015).***

Antenatal care

Antenatal care is one of the most effective health interventions for preventing maternal morbidity and mortality particularly in places where the general health status of the women is poor. The antenatal period presents an important opportunity for identifying threats to the mother and unborn baby's health, as well as for counseling on nutrition, birth preparedness, delivery care and family planning options after the birth ***(Di Mario 2005 and WHO, 2005).***

In recognition of the potential of care through the antenatal period to improve many of health outcomes for women and children, the World Summit for Children in 1990 adopted antenatal care as a specific goal, namely "Access by all pregnant women to prenatal care, trained attendants during childbirth and referral facilities for high-risk pregnancies and obstetric emergencies". Similar aims have been voiced in other major international conferences, including the International Conference on Population and Development in 1994, the Fourth World Conference on Women in 1995, their five-year follow-up evaluations of progress, and the United Nations General Assembly Special Session on Children in 2002 ***(UNGA, 2002)***.

The development of ANC programs was stimulated by the realization that whereas maternal mortality due to puerperal sepsis, hemorrhage and obstructed labor had declined substantially during the early years of the 20th century, this was not the case for deaths associated with eclampsia. If these eclampsia-related deaths were to be averted, it was supposed, interventions would be needed earlier during the pregnancy, to measure blood pressure, identify women at risk of eclamptic convulsions, and take measures to reduce blood

pressure whenever possible **(*WHO and United Nations Children's Fund, 2003).***

The risk approach, adopted as a way of identifying which women are most likely to develop serious complications, has been shown to have only limited effectiveness. Most women who go on to develop life threatening complications had no apparent risk factors; conversely, those identified as being at risk generally ended up with uneventful deliveries ***(Maine, 1991 and WHO et al., 2007)***.

Other antenatal interventions, such as detection and treatment of anemia and management of sexually transmitted infections (STIs), offer improvements in health without necessarily any equivalent reduction in the risk of maternal death. It has therefore become clear that antenatal care interventions cannot be expected to have significant impact on maternal mortality. There is now broad agreement that the focus of antenatal care interventions should be on improving maternal health, this being both an end in itself and necessary for improving the health and survival of infants ***(WHO and United Nations Children's Fund, 2003).***

- **ANC represents an important entry point for different programs and for provision of integrated care:**

Pregnancy often represents the first opportunity for a woman to establish contact with the health system. There is a large gap between a single antenatal visit and optimum ANC, which would require follow up visits and several preventive interventions. Several conditions that are prevalent in Africa, such as malaria, STIs, maternal and neonatal tetanus, HIV, tuberculosis (TB), and some nutritional deficiencies, can be addressed during ANC. If not effectively managed, most of these conditions interact during

pregnancy and may worsen pregnancy outcomes ,especially HIV and malaria .Thus, ensuring the integration of ANC with other programs can be particularly beneficial, both for the woman and her baby, who can receive better care, and for the health system, as missed opportunities and program costs can be reduced ***(Kuhnt and Vollmer , 2017).***

- **ANC offers an opportunity to develop a birth and emergency preparedness plan:**

WHO recommends that all pregnant women have a written plan for dealing with birth and any unexpected adverse events. Women should discuss and review this plan with a skilled attendant at every ANC assessment and one month before the expected date of birth. A birth and emergency preparedness plan includes identification of the following elements: the desired place of birth; the preferred birth attendants, the location of the closest appropriate care facility, funds for birth-related and emergency expenses, a birth companion, support in looking after the home and children while the woman is away, transport to a health facility for the birth, transport in the case of an obstetric emergency and identification of compatible blood donors in case of emergency ***(Acharya et al., 2016*)*.***

- **ANC visits provide opportunities to promote lasting health, offering benefits that continue beyond the pregnancy period:**

This includes birth preparedness, but also extends to cover health information and counseling for pregnant women, their families, and communities. Relevant information, education, and advice regarding appropriate nutrition and rest, promotion of early and exclusive breastfeeding and feeding options for HIV-positive women, smoking cessation, avoidance of alcohol and drugs, and

parenting skills should be made available to the woman and family. Guidance on family planning and pregnancy spacing, seeking necessary care, and caring for the newborn baby are also important components of ANC. These interventions integrate prevention and detection ofsome direct and indirect causes of maternal and newborn death that occur during pregnancy ***(WHO, 2007)***.

The antenatal period clearly presents opportunities for reaching pregnant women with a number of interventions that may be vital to their health and well-being and that of their infants. For example, if the antenatal period is used to inform women and families about danger signs and symptoms and about the risks of labor and delivery, it may provide the route for ensuring that pregnant women do, in practice, deliver with the assistance of a skilled health care provider ***(Gudu and Add, 2017).***

The antenatal period provides an opportunity to supply information on birth spacing, which is recognized as an important factor in improving infant survival. Better understanding of fetal growth and development and its relationship to the mother's health has resulted in increased attention to the potential of antenatal care as an intervention to improve both maternal and newborn health ***(WHO and United Nations Children's Fund, 2003***).

Tetanus immunization during pregnancy can be life-saving for both mother and infant. The prevention and treatment of malaria among pregnant women, management of anemia during pregnancy and treatment of STIs can significantly improve fetal outcomes and improve maternal health. Adverse outcomes such as low birth weight can be reduced through a combination of interventions to

improve women's nutritional status and prevent infections (malaria, STIs) during pregnancy (***Zohra et al., 2014).***

More recently, the potential of the antenatal period as an entry point for HIV prevention and care, in particular for the prevention of HIV transmission from mother to child, has led to renewed interest in access to and use of antenatal care services ***(Zohra et al., 2014)***.

Provision of effective antenatal care:

Antenatal care includes receiving prescribed medical and other care during pregnancy that is identified as promoting the health of pregnant women, and is credited with lowering fetal and infant mortality and leading to the birth of healthier babies. In 2007, the WHO published the Standards for Maternal and Neonatal Care, which offered suggestions for pregnant women to practice good health behavior during pregnancy. The suggestions were aimed at preventing, alleviating, and treating the health problems or diseases causing unfavorable outcomes of pregnancy. They also intended to provide women and their partners/families with adequate information on healthy pregnancy and emergency preparedness related to pregnancy ***(WHO, 2007)***.

These WHO standards defined the provision of ANC as: "All pregnant women should have at least four antenatal care assessments by or under the supervision of a skilled attendant. These should, as a minimum, include all the interventions outlined in the new WHO antenatal care model and be spaced at regular

intervals throughout pregnancy, commencing as early as possible in the first trimester ***(WHO, 2007)***.

In order to make prenatal care accessible to every woman, regardless of socioeconomic status and residence, the WHO standards required: national and local policy in line with country epidemiological context, recruitment and deployment of sufficient skilled attendants, provision of necessary equipment and drugs for essential prenatal care, record of pregnancy history including individual cards detailing all action taken, treatment and advice, pregnancy test, plans for delivery, establishment of a skilled attendant network to cope with emergencies and complications, and educational programs for pregnant women and their partners/families ***(Hamed, 2014)***.

To put these standards into action and to ensure accessibility for every woman regardless place of residence, another requirement was notified by the WHO: "Skilled attendants and other health care providers offering antenatal care services" must provide health education for the community, offer a confidential and private environment to practice prenatal care, refer women with special need of prenatal care, and keep record on the maternal card ***(WHO, 2007)***.

Care during pregnancy should enable a woman to make informed decisions, based on her needs, after discussing matters fully with the professionals involved. Any interventions offered in the antenatal period should be of proven effectiveness and be acceptable to the recipients. Both the individual components and the full package of ANC should conform to these criteria ***(Di Mario, 2005)***.

Care of woman during pregnancy should include Pregnancy surveillance forher and her unborn child, Preventive measures, including immunization (especially with tetanus toxoid) and screening for underlying diseases such as anemia, malaria, sexually transmitted infections (of which syphilis is particularly important) HIV infection, and underlying mental health problems and/or symptoms of stress or domestic violence, Recognition, management and treatment of pregnancy-related complications and/or underlying or concurrent illness or disease, preparedness of emergency plan, Health education and promotion for the women and her family to increase awareness of maternal and neonatal health needs and self-care during pregnancy and the post natal period, including social support during and after pregnancy ***(Benova , 2018).***

Another important issue is healthy lifestyles, healthy diet, health and safety/injury prevention, support and care in the home. It is also important to support care seeking behavior, including recognition of danger signs for the women and newborn, promoting postpartum family planning/birth spacing, and preparingthe pregnant woman and her partner both emotionally and physically ***(WHO, 2007).***

Recently, there has been a shift in thinking from the high risk approach to focused ANC. The high risk approach intended to classify pregnant women as “low risk” or “high risk” based on predetermined criteria and involved many ANC visits. This approach was hard to implement effectively since many women had at least one risk factor and not all developed complications; at the same time, some low risk women did develop complications, particularly during childbirth. Focused or goal oriented ANC

services provide specific evidence-based interventions for all women, carried out at certain critical times in the pregnancy ***(Wilunda et al., 2017).***

National ANC recommendations vary between countries regarding number of visits, timing of visitsand service contents of visits. For women with normal pregnancy, in the middle and low income countries, the WHO recommends four ANC visits at 4^{th}, (6^{th} or 7^{th}), 8th and 9^{th}month ***(Agha and Tappis, 2016).***

The first ANC visit should be as early as possible in pregnancy, preferably in the first trimester. The last visit should be at around 37 weeks or near the expected date of birth to ensure that appropriate advice and care have been provided to prevent and manage problems such as multiple births (e.g. twins), post maturity (e.g. birth after 42 weeks of pregnancy, which carries an increased risk of fetal death), and abnormal positions of the baby (e.g. breech, where the baby's head is not the presenting part at birth) ***(Chama-Chiliba and Koch, 2015).***

The WHO focused ANC (FANC) or basic ANC model separates pregnant women into two groups: those likely to need only routine antenatal care (some 75% of the total population of pregnant women), and those with specific health conditions or risk factors that necessitate special care (25% of pregnant women). For the first group, a standard programme of four antenatal visits is recommended (with additional visits should conditions emerge which require special care) ***(Solnes et al., 2017).***

The WHO guidelines are also specific as regards the timing and content of antenatal care visits according to gestational age. The

guidelines recommended that "only examinations and tests that serve an immediate purpose and that have been proven to be beneficial should be performed". These examinations include measurement of blood pressure, testing of urine for bacteriuria and proteinuria, and blood tests to detect syphilis and severe anaemia. Routine weight and height measurement at each visit is considered optional. But evidence based programming on the optimal number, timing and content of antenatal visits is not yet routine in most settings ***(Kyei et al., 2012).***

The first assessment in ANC is to distinguish pregnant women who require standard care, such as the four-visit model, from those requiring special attention and more visits. Depending on the setting, approximately 25-30 percent of women will have specific risk factors which require more attention. These women need more than four visits. Figure 1 contains an overview of the interventions at each ANC visit based on the four-visit model as applied in focused ANC. Most of the interventions recommended in the table are supported by scientific evidence, are low cost, and can be implemented in first level facilities in all countries in Africa ***(WHO, 2007).*** (**Figure 1) (Annex 1).**

The World Health Organization has issued a new series of recommendations to improve quality of antenatal care to reduce the risk of stillbirths and pregnancy complications and give women a positive pregnancy experience. A positive pregnancy experience is defined as: maintaining physical and socio-cultural normality, maintaining a healthy pregnancy for mother and baby (including preventing and treating risks, illness and death), having an effective transition to positive labour and birth, and achieving positive

motherhood (including maternal self-esteem, competence and autonomy ***(Yaya et al., 2017).***

By focusing on a positive pregnancy experience, these new guidelines seek to ensure not only a healthy pregnancy for mother and baby, but also an effective transition to positive labour and childbirth and ultimately to a positive experience of motherhood ***(Lothian, 2009).***

An important feature of these guidelines is their comprehensiveness. Not only do they provide recommendations on standard maternal and fetal assessments, but also on nutrition during pregnancy, on prevention and treatment of physiological problems commonly experienced during pregnancy (e.g. nausea, heartburn, etc.), and on preventative interventions for certain contexts (e.g. malaria and/or HIV endemic areas). The guidelines also include recommendations on counseling and supporting women who may be experiencing intimate partner violence. Guidance on how antenatal care services can be provided more effectively and in different contexts is also included ***(WHO, 2016)***.

In developing these guidelines, WHO brought together global experts to assess evidence from different sources (effectiveness reviews, qualitative evidence synthesis, test accuracy review and mixed method reviews) and 49 recommendations to guide countries on how to provide antenatal care services with proven effectiveness were identified ***(WHO, 2016).***

The new guidance increases the number of contacts a pregnant woman has with health providers throughout her

pregnancy from four to eight. Recent evidence indicates that a higher frequency of antenatal contacts by women and adolescent girls with a health provider is associated with a reduced likelihood of stillbirths. This is because of the increased opportunities to detect and manage potential complications. Eight or more contacts for antenatal care can reduce perinatal deaths by up to 8 per 1000 births when compared to 4 visits ***(Yaya et al., 2017).***

A woman's 'contact' with her antenatal care provider should be more than a simple 'visit' but rather the provision of care and support throughout pregnancy. The guideline uses the term 'contact' as it implies an active connection between a pregnant woman and a health care provider that is not implicit with the word 'visit'. The new model increases maternal and fetal assessments to detect complications, improves communication between health providers and pregnant women, and increases the likelihood of positive pregnancy outcomes. It recommends pregnant women to have their first contact in the first 12 weeks' gestation, with subsequent contacts taking place at 20, 26, 30, 34, 36, 38 and 40 weeks' gestation ***(WHO, 2016 and Bookari et al., 2017).***

The WHO Technical Consultations led to the development of 49 recommendations related to five types of interventions: Nutritional interventions; Maternal and fetal assessment; Preventive measures; Interventions for common physiological symptoms; and health system interventions to improve utilization and quality of ANC. Interventions were either recommended, not recommended, or recommended under certain conditions based on the GDG's

judgments according to the DECIDE criteria, which informed both the direction and context, if any, of the recommendation ***(WHO,2016).*** **(Figure 2) (Annex 1).**

Evidence based ANC

Assessment of ANC should be carried out by well-designed clinical trials for each intervention. The best evidence comes from randomized controlled trials (RCT), in which pregnant women arerandomly assigned to either an experimental group that receives the intervention, or a control groupthat does not. Differences in results are then compared. Observational studies may also shed somelight on the utility of these interventions. Other types of studies from social science (qualitative research) may provide other relevant evidence. Evidence-based clinical guidelines for clinical practice have been derived from the best of such evidence ***(Chalmers, 1989).***

Cost consideration regarding ANC interventions

Utilization of economic evaluation to countries with different health care context and resources may be limited. However, experiencing a safe pregnancy, labor and delivery is a right in itself; therefore health care policy decisions should not be driven by exclusively economic consideration ***(Di Mario, 2005).***

- **Anti-D administration to Rh-negative women**

Economic evaluation show that routine anti-D prophylaxis added to postpartum prophylaxis, for *Rhesus factor* (Rh)-negative women is a cost-effective when there is a moderate to high probability of subsequent pregnancies ***(Di Mario, 2005*)*.***

- **Gestational diabetes mellitus (GDM) screening**

In the absence of adequate evidence to determine whether selective or universal screening is effective in improving health outcomes for pregnant women and babies, reliable estimates of the cost-effectiveness of screening are not possible. The available studies do not include all relevant information related to GDM and data on the extent to which the entire screening process reduces adverse outcomes, and on the net cost per adverse event prevented. Reliable estimates of the costs of GDM for women who are not screened are not available ***(Di Mario, 2005*)**.

- **Down's syndrome screening**

Two cost-effectiveness evaluations of Down's syndrome screening performed in the United Kingdom have been identified. The integrated test seems to be more cost-effective than other screening strategies. ***(Di Mario et al., 2005*)**.

- **A symptomatic bacteriuria**

A cost-effectiveness analysis conducted by the National Collaborating Centre for Women and Children Health (NCC-WCH), favors urine culture screening over leucocyte esterase-nitrite dipstick screening ***(Di Mario, 2005*)**.

- **Rubella**

The implementation of a rubella eradication program has a positive cost-effective ratio. Strategies include mass campaign immunization, female adolescent immunization and children of both

sexes immunization. Nevertheless, it is not clear which strategy show the best cost-effectiveness ratio ***(Di Mario, 2005*)**.

- **Syphilis**

A cost-effectiveness analysis conducted by the NCC-WCH concludes that universal screening is more cost-effective than either screening high risk groups or not screening at all. Screening for syphilis is also considered cost-effective both in developed and developing countries in a recent WHO reviews ***(Di Mario, 2005*)**.

Chapter 2: Utilization of ANC

Utilization or access of health services means the appropriate use of individual health services to attain the best health consequences **(*Levesque et al., 2013)***.

A number of interrelated personal, structural and health provider barriers delay, or prevent access to ANC ***(Manzi et al., 2014).***

Utilization of maternal health services is the cornerstone for reducing MMR and hence achieving MDG 5. Barriers of utilization of health services can be divided into 2 categories: supply and demand barriers. Effective factors on demand barriers are the inability to use health services on individuals, family or society, while the supply barriers involve inherent aspects of health system which can prevent the use of services by individuals, families and society **(*Barman et al., 2013 and Martinez et al., 2012).***

Utilization of maternal health services can be measured by many indicators as Percentage of mothers who received any and regular antenatal care from a trained medical provider and who had at least one tetanus toxoid injection during the pregnancy, percentage of mothers whose last live birth was protected from neonatal tetanus, and percentage of births who were delivered by a skilled provider, who were born in a health facility, and who were delivered by caesarean section ***(El-Zanaty, 2014).***

On identifying barriers that prevent access to ANC, Many studies found significant effects of ethnic identity, regions, rural-urban, education attainment, parity, age, marital status, cost (include the cost of supplies, medicine and transportation), religion, occupation, and family size and structure on women's decisions on ANC utilization **(*Sadeghi et al.,2012 and Raghfar et al., 2012).***

Other determinants are related to health service characteristics" availability, accessibility, affordability" women's position in the household and the society, women's knowledge, attitudes, beliefs, and culture were also found to correlate with ANC usage ***(Simkhada et al., 2008 and Yang et al., 2010)***.

From these factors, some are more influential than others. Woman's and husband's educational level, parity, birth interval or order, planned pregnancy, age of woman at marriage or pregnancy, marital status, ethnicity/caste/religion, family structure and size were listed as socio-demographic factors. These seven factors were found significantly correlated with ANC utilization in the developing countries. Woman's education was the most influential determinant, followed by parity ***(Simkhada et al., 2008)***.

Factors affecting the utilization of ANC:-

- **Age of mother:**

The mother's age at first pregnancy is an important predictor of ANC utilization Where women delivering at younger age were more likely to use antenatal care than elder ones, (whose age less than or equal to twenty years at the time of first pregnancy were

nearly three times more likely to use ANC services than whose age at first pregnancy was more than twenty years). This is may be due to that young women with their first pregnancy and delivery are more careful about their pregnancy and there for ask seeking institutional care than multi-parous women, or older women, as they prefer to trust traditional birth attendants due to their previous knowledge they had. Young women may also be likely to be educated than older women **(*Bahilu et al., 2009 and Gebremichael , 2017).***

- **Parity**

Parity plays a significant importance in ANC utilization. This could be because women with a first child are probably more cautious about their pregnancy and are usually more likely to have difficulties during labor and delivery than women of high parity. This may result in low parity women being more motivated to utilize maternity care than high parity women. Further, as the order of birth increases, women may rely more on their previous experience and knowledge. A possible explanation for the low utilization of delivery care services among women from higher order birth is that such women could have developed confidence and may believe that modern healthcare is not as necessary as they had gained experience and knowledge from previous pregnancies and births ***(Prashant et al., 2012).***

- **Education**

There is evidence that suggest that higher education level of the woman was a very significant and important factor in determining optimal ANC utilization. Furthermore, the

differential inequalities, in women with higher education level who attained optimal ANC frequency, were most prominent in urban and older women than rural and young women, respectively. This finding suggests that educated women most likely have adequate knowledge on ANC services and understand the importance of early booking for ANC as well as attending the recommended four visits. Thus, they tend to value ANC services and will take advantage of this compared to women with lower education. However, these educational attainment-associated differentials may also suggest that access to health care is still driven by inequity-related dynamics and imbalances with the poor and predominantly rural uneducated groups experiencing limited access ***(Muyunda et al., 2016).***

- **Knowledge**

Knowledge plays a heavy important role in the utilization of ANC; encouraging pregnant women to ask for and accept ANC services. Similarly, some studies have confirmed the importance of raising awareness between women of reproductive age, especially among the uneducated. Enhancing the knowledge about benefits of ANC for pregnant women is an important element in enabling them to enrich their experiences as well as supporting their effort to better appreciate ways to protect their health and that of their children. Moreover, once they become knowledgeable about ANC, they will take care of their own health much better. Healthy mothers who visit ANC regularly during pregnancy will effectively enhance their family's health. A lessening rate of maternal and child deaths will also reduce a family's spending and enhance their children's health ***(Yang et al., 2010)*.**

- **Attitude**

A good attitude is the most valuable precondition for any healthy behavior. Women who had a positive attitude towards ANC had a higher proportion of ANC visits than those with a negative attitude. Respondent's attitude was a critical factor in encouraging pregnant women to receive ANC services ***(Ibrahim et al., 2014).***

By improving knowledge about the benefits of ANC and the importance of a positive attitude toward it, women will understand that ANC's medical procedures and interventions will save their lives and improve their children's health. In this way they will be motivated enough to resist their reluctance. In other words, changing attitudes and behavior is the most challenging task, but is also the least costly. Proper educational campaigns and the improved dissemination of information are investments for the long-term ***(Yang et al., 2010).***

- **Employment**

Employment has been found as a determinant of ANC utilization through having benefits from the employers. It was found that women with governmental employment earned health benefits from insurance coverage, while women who worked outside the governmental sector were less likely to be involved in any health insurance program ***(Graner et al., 2010 and Malqvist et al., 2010)***.

- **Wealth and income**

The use of ANC was higher among women with a high income who regarded the cost of services and transportation as no great expense. Family income and the cost of accessing care did in fact play a very important role in the utilization of ANC services and in encouraging pregnant women to visit ANC. In order to support and encourage pregnant women to visit the ANC and thus fulfill the MDG on maternal and child health, the government should provide free access to ANC for pregnant women who are poor. Moreover, different districts may have different recommendations depending on the location and modes of accessibility. Such differences should be considered when developing policies ***(Alam et al. , 2004; Tlebere et al., 2007 and Simkhada et al., 2008)***.

One of the factors that is positively associated with the utilization of 4 ANC visits is the good economic conditions and receiving financial support from the husbands. Consistent with other studies, mothers having lower income often face difficulties, including financial disadvantages, to get access to ANC service. ***(Bui et al.2015)***

In order to encourage women during pregnancy to visit the ANC and thus fulfill the MDG on maternal and child health, Strategies to increase access to health care services in rural areas should be a priority adopted by the government in its policy. Also implementing strategies that would reduce the financial burden associated with using maternal health services, such as, medical

and transportation costs, would enable women from poor households to use maternal health services ***(Mugo et al., 2015).***

- **Residence**

One of the most important factors affecting ANC utilization is the place of residence. Many studies revealed a large difference in the utilization of ANC services between rural and urban women. Such difference might be due to the fact that urban women are more accessible to health services, and have better education and knowledge about ANC than their rural counterparts. Distance or time required to reach the nearest health unit is an important barrier to the use of ANC, women who live close to the health facility were more likely to visit ANC than those who away from it ***(Tran et al., 2011).***

Lack of access roads to villages poses a serious problem, indicating that alternative approaches should be developed to better protect women's health. One way to alleviate such problems is the use of mobile clinics to provide services to remote villages, and health professionals should make home-care visits to pregnant women in remote communities. Moreover, traditional birth attendants (TBAs) should be better trained since they are key collaborators in community empowerment and the mobilization for health. With adequate training they may be able to provide ANC services and to encourage pregnant women to utilize ANC health facilities ***(Yang et al., 2010).***

- **Past obstetric complications**

Illness occurred in previous pregnancies and perceived susceptibility to illnesses in future pregnancy also was a part in the factors associated with ANC utilization. Women with complications during pregnancy were more likely to seek ANC care more than who had or are having normal non complicated pregnancy ***(Yeoh et al., 2016).***

- **Other personal factors**

Women whose husband approves of antenatal care were more likely to have used prenatal care than women whose husband did not approve of ANC **(*Seifu et al., 2017)***.

Women who wanted their pregnancies were more likely to utilize ANC than women who did not want ***(Ochako et al., 2016).***

Other factors associated with antenatal care utilization found are the maternal desire for pregnancy and women's autonomy. Women with an unwanted pregnancy are more likely to underutilize antenatal services. Unwanted pregnancies are associated with late start or less frequent antenatal visits compared to wanted pregnancies ***(Gabrysch et al., 2009).***

Moreover, the women who were not involved in the final decision making about their own health care were more likely to underutilize antenatal services. An increased likelihood for underutilizing antenatal services was found in women who were the only decision maker about their own health care, compared to those who involved others in the decision making. This finding showed the vital role of family support in utilizing health services.

It also indicates that public health strategies should target not only the pregnant women but also other family members to increase their awareness about the importance of antenatal services ***(Titaley et al., 2010; Sado et al., 2014 and Deo et al., 2015).***

The last factor found was exposure to the media, knowledge of family planning and personal hygiene. Knowledge about family planning was the highest between those factors that affect ANC utilization ***(Simkhada et al., 2008).***

Other determinants are related to health service characteristics" availability, accessibility, affordability"

- **Health system characteristics**

Access to health service can be defined as 'the timely use of service according to need'. Utilization of health care is used as an operational proxy for access to health care. Access has four dimensions: availability, geographic accessibility, affordability and acceptability ***(Oliver et al., 2004; O'Donnell O, 2007 and AugPeters et al., 2008).***

- **Availability**

By availability, we mean having the right type of health services available to those who need them, that is, supplying the appropriate health-care providers and/or services in the right place and at the right time to meet the prevailing needs of the population ***(Susan et al., 2017).***

- **Accessibility**

Geographical accessibility refers to the ease with which residents of a given area can reach services and facilities. In accessibility, we refer to the relationship between the location of supply and the location of users, taking into consideration user transportation resources and travel time, distance and cost ***(Susan et al., 2017).***

Access to health care services directly translates to use of these services – meaning that, if people cannot access the health care services, then use of such services will be limited. Distance (or travelling time) to health care facilities is one of the major barriers to health care use, more especially in rural South Africa, where health care centers are often located further away from a large number of residents **(*Peltzer et al.,2005 and Gage, 2007).***

In order to receive adequate health care, rural residents and some few urban residents, have to travel long distances, and they also have to wait in long queues before being assisted by health care personnel who are often disrespectful and show a non-caring attitude **(*Ensor et al., 2004 and Silal et al., 2012).***

The rural context of the country presents the greatest challenge to the government because most households and locations are scattered far apart from each other. Women in rural settings tend to use maternal health services far less than women in urban settings which could be explained by the fact that health care resources are often unequally distributed between rural and urban areas ***(Dagne , 2010 and Tsawe et al., 2014).***

- **Affordability**

Affordability deals with the relationship between the price of services and the willingness and ability of users to pay for those services ***(Susan et al., 2017).***

Affordability (the ability to pay for the services) is composed of women occupation/employment, socioeconomic status/standard of living, husband occupation, and cost of the services. Cost of services and husband occupation were not as important as socio-economic status/ standards of living and women occupation/ employment ***(Simkhada et al., 2008)***.

- **Acceptability**

Acceptability deals with how responsive health service providers are to social and cultural expectations of individual users and communities ***(Susan et al., 2017).***

Acceptability is based upon the adequacy of services, infrastructure, equipment, commodities and human resources to local social and cultural expectations, Devolved health services have also had a favorable perceptual influence on the acceptability of referral maternal health care ***(Susan et al., 2017).***

Women perceptions about the importance of ANC

Almost all women perceive ANC services to be important and expressed complete trust in health care providers and the care they receive. In despite, a few women do not realize the importance of care given. The most ordinarily mentioned assistance given during pregnancy included advice are about care

of the pregnancy ; assessment of fetal vital status; ascertainment of fetal position; maternal vaccination; provision of receipts for bed nets to prevent malaria; blood tests to diagnose disease and assess health status. As a routine part of ANC, women receive a clinic card which is critical in case of an unexpected complication that requires hospital attendance ***(Mrisho al., 2009)***.

- **Women attitude and beliefs towards the timing of ANC initiation:**

Women who perceived early antenatal care as important illustrated their reasons as, early seeking provide a chance to confirm pregnancy early, the early ANC will have its benefits for them and their growing fetuses, early ANC benefits overlays the given cost and efforts, early antenatal care build as much as sound knowledge from the ANC providers , attending early will put them away from being reprimanded by clinic staff for late initiation of ANC and finally could prevent miscarriage ***(Mrisho al., 2009)***.

On the other hand, Women who perceived early antenatal care as not important illustrated their reasons as attending late will give them time to be sure of being pregnant to avoid coming to the clinic many time, and as pregnancy is a normal physiologic process and uncertainty of being pregnant, it is not important to seek ANC early, late ANC will keep them away from attending many times thus, saving money, time and efforts, women's previous experience would be enough and could avoid them from being exhausted from seeking remote place if they live in a far village, Attending late will modernize shyness or embarrassment

(particularly among older women and school-age girls), and finally apathy or laziness , lack of money and denying occurrence of emergencies all can prevent seeking early attendance ***(Mrisho al., 2009).*** **(Figure 3) (Annex 1)**

- **Perceived barriers to ANC:-**

The perceived barriers to ANC utilization were categorized as follows: 1) Issues related to access to health facilities and lack of resources. These included long distance to health facilities, lack of means of transportation to the health facilities, poor roads, and demand for payment for health care at some health facilities; 2) The influence of the socio-cultural context including heavy burden of domestic chores, the negative influence of husbands who were reluctant to allow their wives to attend ANC, and insecurity; 3) Perceptions about pregnancy including misperceptions about the benefits of ANC and low perceived risk of pregnancy-related complications; and 4) Perceptions about the quality of care and the efficacy of medical treatment ***(Wilunda et al.,2017)*** **.**

Studies about ANC utilization all over the world:

As utilization of any health services is a complex behavioral phenomenon, many studies all over the world have been done to assess utilization of maternal services. Empirical studies of preventive and curative services have often found that the use of health services is related to the availability, quality and cost of services, as well as to social structure, health beliefs and personal characteristics of the users ***(Hamed, 2014).***

A study done in rural Cambodia aimed to identify the underlying causes of Cambodian women's non-use of maternal health services provided by skilled birth attendants. It identified 5 barriers to the utilization of maternal health services; financial barriers; physical barriers; cognitive barriers; organizational barriers; psychological and socio-cultural barriers ***(Matsuoka, 2010).***

Another cross-sectional study aimed to understand access to maternal health care and the factors shaping it amongst poor migrants was done in Mumbai, India .The results showed that access to antenatal care was poor among migrants with less than a third of them receiving basic antenatal care and a quarter delivering at home. Poor maternal health care was also due to weaker demand for health care as a result of the lack of felt-need among migrants due to socio-cultural factors and lack of social support for, and knowledge of, health facilities in the city. Supply-side factors such as inadequate health infrastructure at primary and secondary levels, lack of specific strategies to improve access to health care for migrants and cumbersome administrative procedures that exclude migrants from certain government programmes all need to be addressed ***(Gawde et al., 2016).***

To assess the uptake of maternal health services; its determinants and the perception of users about these services, a descriptive cross sectional study was carried out in Edo North senatorial zone of Nigeria.The utilization of the ANC services was 79% and 81% for the sub-urban and rural communities respectively. The predictors of the antenatal services utilization included: educational status, cost per illness, self assessment

of health, clean environment and sources of information on maternal care. Marital status, average income and type of community were the predictors of family planning services utilization ***(Alenoghena et al, 2015).***

Another study tried to describe the determinants of maternal health services utilization was in Uganda .The utilization of maternal health services varied greatly by demographic and socio-economic characteristics. Women with a secondary and higher education, and those of higher income levels, were more likely to utilize the ideal maternal health services package. Therefore, there is need to formulate policies and design maternal health services programs that target the socially marginalized women ***(Rutaremwa et al., 2015).***

A descriptive cross-sectional study of Syrian refugees living in urban and rural Lebanon and Jordan was undertaken to assess utilization of maternal health services them in both countries. At the time of these surveys, Syrian refugees living in Jordan and Lebanon had similar levels of utilization of maternal health services, which is likely a reflection of both the care-seeking practices of women in Syria before the conflict and of the availability of health service providers in Jordan and Lebanon. While maternal health services may be widely available in the public and private sectors of both countries, costs remain a substantial factor in care-seeking decisions and locations as the refugee populations outside of camps live under considerable financial stress, without legal right to work and without sustainable livelihood opportunities so the ability to access

essential maternal health services will remain a challenge ***(Tappis et al.2017).***

To examine the differential effects of women's education on utilization of maternal health services within different socioeconomic strata in Africa, basically in the Democratic Republic of the Congo, Egypt, Ghana, Nigeria and Zimbabwe a study was done. The findings revealed country-specific variations in maternal health service utilization, and for most indicators there was a clear gradient among socioeconomic strata: women living in better-off households exhibited greater access to, and utilization of, maternal health services. Multivariate analyses revealed that women's education had a positive association with type of antenatal care provider, timing and frequency of antenatal care visits, place of delivery and presence of a skilled birth attendant at delivery. Many other factors were found to be significantly associated with maternal health service utilization. For instance, parity had a negative and significant association with timing of first antenatal care visit. Likewise, partner's education was positively and statistically associated with timing of first antenatal care visit. It is argued that an over-generalization of association between women's education and maternal health service utilization can be misleading ***(Tsala Dimbuene et al., 2017)***.

In Egypt, There was a study examined the extent of utilization of maternal health services (MHS) offered by Health Insurance Organization (HIO) in Alexandria, But it is too old and need to be renewed to assess the current extent of utilization in Egypt (***El-Mahally, 1997)***.

A study done in Egypt the purpose of it was determining the utilization pattern of Maternal and Child Health (MCH) services in urban and rural health centers in El-Minia City and identifying factors affecting client dissatisfaction with the services provided by the two centers. From this study it was concluded that the rural center had a higher frequency of attendance regarding the curative services, ANC, and delivery care, while the urban center had higher attendance regarding family planning services. Despite higher utilization of the rural center, histories of abortion, and under-5-year moralities as an indication of maternal needs to special health care were more prevalent among customers of the rural center than those of the urban center, and clients of the urban center reported more satisfaction than those of the rural center. The most common causes of dissatisfaction that need to be modified were long waiting time and improper environment but this study was limited only for mothers in Upper Egypt neglected pattern of utilization in mothers in Lower Egypt ***(Awadalla et al., 2009).***

Another study assessed the levels of the socio-economic factors associated with maternal health-seeking behavior among women from poor households in rural Egypt found that coverage of basic maternal health interventions and utilization of private providers are lower among rural poor women in Upper Egypt than nationally. Variables capturing socio-cultural resourcefulness and economic resourcefulness were useful predictors of ANC and facility delivery but this paper recommend further understanding of issues surrounding availability, affordability and quality of maternal health services among the poor as they are crucial to

eliminate inequalities in maternal health coverage in Egypt ***(Benova et al., 2014).***

So, we are doing this research trying to identifying the overall factors affecting the utilization of maternal health services nowadays in Lower Egypt, focusing on ANC program as our tool for evaluating maternal services.

Chapter 3: Antenatal Care in Egypt

According to Egypt Human Development Report (EHDR) and WHO, significant improvement has been achieved in the past 25 years in matters related to maternal health. The decline in maternal mortality is likely associated with high rates of family planning use, antenatal care and skilled birth attendance. Egypt is on track to achieve its MDG 5a for reducing maternal mortality. According to recent United Nations maternal mortality estimates, Egypt has reduced its maternal mortality ratio to33/100,000 live births in 2015 compared to 45/100,000 in 2013,55/100,000 in2008, 75/100,000 in 2000 and 120/100,000 in 1990. Regional differences are present, with MMR being lowest in urban governorates and highest in frontier governorates ***(EHDR, 2016).***

Antenatal care from a trained provider is important in order to monitor pregnancy and reduce the risks for the mother and child during pregnancy and at delivery. To be most effective, it is recommended that all mothers see a trained provider at least four times for antenatal checkups during pregnancy ***(El-Zanaty, 2014).***

Two of the key Millennium Development Goal indicators in the area of maternal health are presented in the report of Egypt Demographic and Health Survey (EDHS), the proportion of mothers who had any antenatal care during pregnancy prior to the last birth, and the proportion of mothers who were seen by a medical provider four or more times during that pregnancy. It is important to note that

these indicators are slightly different from the antenatal care figures published in the reports for prior EDHS surveys, which were based on ANC coverage of all births during the five-year period before the survey. ANC coverage measures based on the last live births are presented for prior EDHS surveys in the discussion of trends in maternal health indicators below ***(El-Zanaty, 2014).*** For more details see **(Figure 4), (Annex 1).**

According to the 2014 EDHS results, 90 percent of mothers received antenatal care from a trained provider prior to the last birth during the five-year period before the survey. More than eight in ten mothers had at least four antenatal visits. Mothers age 35 and older are slightly less likely than younger mothers to get antenatal care. The percentage getting antenatal care declines directly with the child's birth order ***(El-Zanaty, 2014).***

Urban mothers are somewhat more likely to receive antenatal care, especially regular care, than rural mothers. Considering place of residence, antenatal care coverage remains substantially lower in Upper Egypt and in the three Frontier Governorates than in the Urban Governorates and Lower Egypt. Education status is directly related to the likelihood of receiving antenatal care, with only 69 percent of mothers with no education receiving regular antenatal care compared with 88 percent of mothers who had a secondary or higher education ***(El-Zanaty, 2014).***

Two tetanus toxoid (TT) coverage indicators are presented in EDHS report. The first indicator is based on a question included in the

2014 EDHS on the number of tetanus toxoid injections that a mother received during pregnancy. The TT coverage indicator is based on the mother's receipt of at least one TT injection for the last live birth ***(El-Zanaty, 2014).*** **(Figure 4), (Annex 1).**

The last birth was considered to be fully protected from tetanus if the mother had: two injections during the pregnancy of her last live birth; two or more injections with the last injection received within 3 years of the last live birth); three or more injections, with the last injection received within 5 years of the last live birth; four or more injections, with the last injection received within ten years of the last live birth; or five or more injections at any time prior to the last live birth ***(El-Zanaty, 2014).***

A doctor or trained nurse/midwife assisted at the delivery of 92 percent of all births in the five-year period before the 2014 EDHS, with 87 percent occurring in a health facility. The lowest proportions of medically assisted deliveries were observed for order six or higher birth (77 percent), births to mothers in rural Upper Egypt (83 percent), and births to women with no education (79 percent) ***(El-Zanaty, 2014.)***

More than one-half of deliveries in the five-year period before the survey were by caesarean section. The likelihood of a caesarean delivery increased with the age of the mother and decreased with the child's birth order. Caesarean deliveries were more common in urban areas than in rural areas (60 percent and 48 percent, respectively). Caesarean deliveries were less common in Upper

Egypt, especially in rural areas, and in the Frontier Governorates than in the Lower Egypt and the Urban Governorates ***(El-Zanaty, 2014).*** **(Figure 4) (Annex 1)**.

Maternal health indicators by governorates:

Figure 5, Annex1 presents selected maternal health indicators by governorate. The results indicate that there is considerable variation by governorate in the coverage of maternal health services. For example, the percentage of mothers who received regular antenatal care, i.e., four or more visits, ranged from 80 percent in Kalyubia to 90 percent in Cairo ***(El-Zanaty, 2014).***

Trends in maternal health indicators by residence :*(El-Zanaty, 2014)*

The percentage of mothers who received any antenatal care in urban Lower Egypt rose from 65.8% in 1988 to 95.4% in 2014 while the percentage in rural Lower Egypt rose from 43.1 & in 1988 to 93.3% in 2014.

On the other hand, the percentage of mothers who received any antenatal care in urban Upper Egypt rose from 67.8% in 1988 to 89.3% in 2014 while the percentage in rural Upper Egypt rose from 48.6& in 1988 to 83.8% in 2014.

The percentage of mothers who received regular antenatal care in urban Lower Egypt rose from 37.8% in 1992 to 95.4% in 2014 while the percentage in rural Lower Egypt rose from 13.7& in 2012 to 93.3% in 2014.

On the other hand, the percentage of mothers who received any antenatal care in urban Upper Egypt rose from 33.3% in 1992 to 82.9% in 2014 while the percentage in rural Upper Egypt rose from 10.2& in 1992 to 72.8% in 2014.

The percentage of mothers who had at least one tetanus toxoid injection prior to the last live birth during the five-year period before the survey in urban lower Egypt rose from 15.3% in 1988 to 69.1% in 2014 while the percentage in rural lower Egypt rose from 15.1% in 1988 to 80.8% in 2014.

On the other hand, the percentage of mothers who had at least one tetanus toxoid injection prior to the last live birth during the five-year period before the survey in urban upper Egypt rose from 18.9% in 1988 to 69.2% in 2014 while the percentage in rural upper Egypt rose from 10.9% in 1988 to 78.2% in 2014.

The percentage of mothers who delivered with the assistance of a medical provider in urban Lower Egypt rose from 54.4% in 1988 to 97.8% in 2014 while the percentage in rural Lower Egypt rose from 23.3% in 1988 to 94.4% in 2014.

On the other hand, the percentage of mothers delivered with the assistance of a medical provider who in urban Upper Egypt rose from 46.9% in 1988 to 94.4% in 2014 while the percentage in rural Upper Egypt rose from 14.4% in 1988 to 83.1% in 2014.

The percentage of mothers delivered by caesarean section in urban Lower Egypt rose from 11.3% in 1995 to 70.6% in 2014 while

the percentage in rural Upper Egypt rose from 6.1% in 1995 to 57.8% in 2014.

On the other hand, percentage of mothers delivered by caesarean section in urban Upper Egypt rose from 7.9% in 1995 to 50.2% in 2014 while the percentage in rural Upper Egypt rose from 2.4% in 1995 to 35.9% in 2014. (**Figure 6), (Annex 1).**

SUBJECTS AND METHODS

The present study is a descriptive cross sectional study. It was conducted during the year of 2017. This study was performed according to the following designs:

- Technical design;
- Operational design;

I-The Technical design:

A) Type of the study:-

This study is a descriptive cross sectional study. It identifies pattern of utilization of maternal health services in Benha district.

B) Time of the study:-

The study was conducted during the year of 2017 from 1st January to 31thAugust.

C) Study setting:-

The study was carried out at 2 primary health care facilities at Benha district (Benha MCH center and Gamagra health unit).

D) Sampling:-

The two centers were chosen from all PHC centers located in benha district; one from urban centers and one from rural centers, due to their physical accessibility as they are located at the center of Benha

and Gamgara respectively and their large catchment areas as they serve a lot of people.

1-Benha MCH center: The center served 81145 women and is located at the center of the city close to Benha Teaching Hospital and Benha Health Insurance Hospital and it provides the following services:

1- Family planning department: which mainly provides health education for the mothers about family planning services and help them in choosing the best method that fit everyone (only pills and IUD are available).
2- Vaccination rooms: there are 2 rooms which
    - Provide the EPI vaccines.
    - Take the heel sample from newborns for the screening of hypothyroidism.
    - Giving HB vaccine and HB Ig to the newborns of HB +ve mothers within 6 hours of delivery.
3- Milk pharmacy: it provides the mothers with milk formulas needed for their infants.
4- Gynecology clinic: it manages simple uncomplicated cases of gynecology & obstetrics cases with referral when needed to 2ry care level.
5- Blood labs:
    - It provides screening for hepatitis C virus to any person from 18 to 60yrs. and any person with abnormal results is referred for further investigations.

- Blood pressure measurement and screening for hypertension.
- Random blood sugar measurements.

6- Dental clinic: it manages simple uncomplicated dental problems (mainly caries).

7- Internal medicine clinic and pediatric clinics which manage simple uncomplicated cases with referral when needed.

8- Food surveillance department:

- Provide health certificate to food handlers and personnel dealing with public.
- Periodic water sampling every month for the public places as hospitals and schools.
- Surveillance of occupational health by visiting different factories periodically for checking safety measures.
- Responding to any complain about faulty waste disposal and writing a report.

9- Antenatal clinic: for follow up of women during their pregnancy. At the first visit each woman is given a health record for registration of her full medical and obstetric history. Women are advised to visit the ANC clinic monthly at the 1st 6 months of pregnancy, every 2 weeks in the 7th and 8th months of pregnancy and weekly during the last month. At each visit weight and blood pressure are measured together with general examination and ultrasound follow up. It provides tetanus toxoid vaccination for pregnant women.

10-Breast feeding clinic:

- It provides health education for the mothers about breast feeding.
- It measures the weight of the baby and breast examination is done to identify the baby who needs milk formula.

11-Pilgrims vaccine clinic: for vaccination of meningococcal meningitis.

12-General lab: for simple investigations like stool and urine analysis, fasting blood sugar, pregnancy test in blood, RH test and hemoglobin level in blood.

13-Pharmacy: it provides the patients with all medicines ordered by doctors inside the center.

2-Gamgra health unit: The center served 16229 women and is located at the center of the village. It provides the same services as the MCH center except for absence of milk pharmacy and breast feeding clinic in Gamgara health unit because another unit in a nearby village provides the needed milk formulas.

E) Sample size calculation:

Epiinfo™ software, Version 3.4.3 was used to calculate the least required sample size at 0.05 alpha error and 80% power of the study and population size 97374 women. Using the proportion of ANC utilization (66%) among mothers obtained from previous study in Egypt ***(Chiang et al, 2013)***. The least number was 344. After adjusting for 15% dropout a sample size of **400** women was suggested. As number of females served by Benha MCH center was about 5 times

those served by Gamgra center, so sampling percentage of MCH was 5 times that of Gamgra center. All females fulfilling the inclusion criteria and agreed to participate were included in the study (65 women attending Gamgra center and 335 for those attending MCH).

F) Population frame:

All women who are attending the health centers (units) for obtaining maternal health services or healthy child care services.

G) Study tools and methods:

A pretested structured validated interview questionnaire form was used to collect data from the studied women **(Annex, 2)**.

Most of the questions were pre-coded close ended questions, so that information obtained can be easily computed. The questionnaire was prepared and designed in Arabic language, to ensure that all the interviewed women will be able to understand and answer it exactly.

The questionnaire investigated the following themes:

I- Socio- demographic characteristics of the interviewed female:

Women were asked about their age.

El- Gilany* Social score** was added to the questionnaire and used to assess the socioeconomic status (SES) of the included women and calculated as follow ***(El- Gilany et al., 2012):

The final scale included 7 domains with a total score of 84, with a higher score indicating better SES:

A-Education and cultural domain: for both the woman and her husband **(score =30)**(including total score of woman and husband education which is 28+2 for access to health information system by the following items (1) for each of the following items: Printed materials, e.g. books or audiovisual messages on TV&/ radio.

Educational level	Father	Mother
Illiterate	0	0
Read & write	2	2
Primary education	4	4
Preparatory	6	6
Secondary	8	8
Intermediate institutes	10	10
University graduate	12	12
Postgraduate degree	14	14

B-Family domain: (score = 10)

Residence: Urban slum = 0; Rural = 1; Urban = 2

Number of family members: (parents, children & all dependents) More than or equal 5 members = 1, Less than 5 members =2

Number of earning family members: 1 member = 1, 2 members= 2, 3 members = 3

Education of children: (aged ≥ 5 years whether free or private education). All children going or went to school/university = 3, ≥ 50% going or finished school/university = 2, <50% going or finished

school/university =1, none go/gone to school/university/not applicable = 0.

C- Occupation domain: for both Father and Mother **(score = 10)**

Occupation	Father	Mother
Non-working/house wife	0	0
Unskilled manual worker	1	1
Skilled manual worker/farmer	2	2
Trades/business	3	3
Semi-professional/clerk	4	4
Professional	5	5

D-Economic domain: (score = 5)

- ***Income from all sources:*** In debt = 0, Just meet routine expenses = 1, Meet routine expenses and emergencies =2, Able to save/invest money = 3.

- ***Family receives governmental support:*** Yes = 1; No = 0.

- ***Family pays tax:*** Yes = 1; No = 0.

E-Family possessions domain: (score = 12; 1 for the presence of each of items given below):

Refrigerator – Radio – Television – Washing machine – Telephone/mobile phone – Car – Agricultural land – Non-agricultural land for housing – Shop or animal shed – Other

house (beside the house in which the family is living) – Animals/ poultry–Computer/Internet.

F-Home sanitation domain :(score = 12)

Services: (1) for the presence of each of the following items: Pure water supply – Electricity – Natural gas – Sewerage system – Municipal collection of solid wastes – Flush latrine – Air conditioning

Type of house: Owned, ≥ 4 rooms = 4; Owned, < 4 rooms =3; Rented, ≥ 4 rooms = 2; Rented, < 4 rooms = 1; No place to reside =0

Crowding index: (number of family members divided by number of rooms) ≤ 1 person per room = 1; > 1 person per room = 0.

G-Health care domain: (score = 5)

Usual source of health care: Private health facilities = 5; Health insurance= 4; Free governmental health service = 3; More than one of the above sources = 2; Traditional healer/self-care = 1.

Socioeconomic level was classified into four levels depending on the quartiles of the score calculated: those with score range from 1 – 21, from 22– 42, from 43 – 63 and from 64 – 84 were classified as very low, low, middle and high social levels respectively.

II-Current medical and obstetric history: number of pregnancies, number of live births, type of delivery, any disease (diabetes mellitus, hypertension, cardiac, liver or kidney disease, epilepsy, others), previous pregnancies problems and last pregnancy problem.

III-Women perception about ANC services: Women were asked about the following:

- Degree of importance& usefulness (very useful, useful, not useful and not very useful) of ANC services.
- For whom it is important.
- The proper time of beginning (booking) the ANC services.
- The proper frequency of the ANC visits.
- The best source of the ANC service; governmental or private or somewhere else.
- The investigations and clinical examinations that, she know to be important for pregnant women.
- If she would recommend the ANC service for others.
- If she would use ANC service again in the next pregnancy.

IV-Pattern of utilization of the ANC service:

- If she utilized ANC service in the last completed pregnancy or not.
- If she utilized the ANC service in previous pregnancies or not (only in multipara).
- Where she got ANC?.
- Time of her first ANC visit.

- The frequency of her ANC visits (how many ANC visits she received).
- Barriers for attendance at PHC facilities (if she didn't use PHC services).
- Time needed for arrival at PHC facilities, means for transportation needed for arrival, duration of waiting for the doctor, satisfaction about the provided ANC service and if she faced any difficulties in having the ANC service. (if she attended her last ANC at PHC facility).
- The source of her knowledge about ANC and support during pregnancy.
- The source of encouragement for utilization of ANC.
- The reason(s) of not using the ANC service, if she didn't use it.

V-Information about women's autonomy (the ability of women to take her own decisions):

An autonomy score was calculated in the questionnaire and used to assess the autonomy level of the studied women as follow:

- If she can spend money alone (yes =2, no =0, sometimes =1),
- If she can take some decisions alone (yes =2, no= 0, sometimes =1),
- If she must take her husband's approval before going out of home (yes =0, no =2, sometimes =1),
- If she must take a family member with her on going to the hospital (yes =0, no =2, sometimes =1),

- If she can see her family at any time (yes= 2, no =0, sometimes =1).

Autonomy score was classified into 3 levels depending on the data calculated: those with score range from 7 – 10, from 4– 6, and from 0 – 3 were classified as low, middle and high autonomy levels respectively.

II-The operational Design:

1- Preparatory phase:

1.1 Review of literature.

1.2 Constructing the questionnaire.

1.3 Training of administrator for the application of the questionnaire.

2- Pilot study:

A pilot study was conducted to test the questionnaire and evaluate the interviewer performance. According to the findings of the pilot study the necessary modifications and additions were done.

3- Data Management:

After data collection the questionnaire was validated to confirm no existence of missing data. Socio-economic and autonomy data were coded to calculate the socio-economic and autonomy score then data was entered on the computer using SPSS, version 21 and Epiinfo™ software, Version 3.4 and the data was validated by double entry to confirm that the collected data was entered on the

computer accurately. The collected data was summarized and presented using statistical frequency distribution tables and graphs. Qualitative data was demonstrated in terms of proportions and analyzed by Chi square test (X^2) and Fisher's exact test (FET) using SPSS version 21 and $P \leq 0.05$ was considered to be significant.

On data collection, each interviewed woman was comfortably seated and the objectives of the study were explained to her to motivate her to give accurate answers. About 8 to 10 attendant women were interviewed per day after obtaining their informed consent. It took about 15 – 20 minutes per respondent to complete the interview form.

4- Ethical consideration:

Ethical aspect and administrative approach: Approval from ethical committee of Benha faculty of medicine and the head of Benha Directorate of Health were obtained before the beginning of the study. Also informed consent was taken from females who approved to participate in the study. They were reassured about the confidentiality of any obtained information, and the results would be used only for the purpose of research.

RESULTS

I - Socio-demographic data of the studied group

Table (1): Percent distribution of the studied women according to residence:

Health facility	Residence				Total	
	Urban		Rural			
	No	%	No	%	No	%
MCH in Benha city	167	41.75%	168	42%	335	83.75%
Gamgara rural health unit	0	0%	65	16.25%	65	16.25%
Total	167	41.75%	233	58.25%	400	100%

Table 1 shows that the 83.7% of the studied women attended at MCH in Benha city while 16.25% of the studied women attended at Gamgara health unit and 58.25 % of the studied women were from rural communities while 42% of the studied women were from urban communities.

Table (2): Percent distribution of age of the studied women:

Age		Urban		Rural		X^2	P value
		No	%	No	%		
Age	19-	158	94.6%	180	77.3%	22.3	≤ 0.05
	≥39	9	5.4%	53	22.7%		
Total		167	100%	233	100%		

Table 2 shows that most of the studied women (94.6% urban and 77.3% rural) were in the peak of their fertility life, with age ranging from 19 to less than 39 year old and this difference is statistically significant ($p \leq 0.05$).

Table (3): Percent distribution of the educational level and occupation of the studied women and their husbands:

Educational level		Urban		Rural		X^2	P-value
		No	%	No	%		
Mother 's education	Illiterate	6	3.6%	27	11.6%	125.038	≤ 0.05
	Educated	22	12.6%	144	61.8%		
	University level	139	83.2%	62	26.6%		
	Total	167	100%	233	100%		
Husband's education	Illiterate	5	3%	20	8.6%	136.17	≤ 0.05
	Educated	24	14.3	158	67.8%		
	University level	138	82.7%	55	23.6%		
	Total	167	100%	233	100%		
Occupation							
Mother's work	Not working	44	26.3%	135	57.9%	55.25	≤ 0.05
	Skilled worker	2	1.2%	16	6.8%		
	Employee/ specialist	121	72.4%	82	35.1%		
	Total	167	100%	233	100%		
Husband's work	Not working	1	0.6%	18	7.7%	69.98	≤ 0.05
	Skilled worker	19	11.3%	104	44.6%		
	Employee/ specialist	147	88%	111	47.6%		
	Total	167	100%	233	100%		

Table 3 shows that the majority of the studied urban population were of higher level of education (mother 83.2% and husbands 82.7%) meanwhile only 3.6% and 3% of the urban mothers and husbands were illiterate respectively while the majority of studied rural population were only educated (mothers 61.8% and husbands 67.8%) meanwhile 11.6% and 8.6% of rural mothers and husbands were illiterate respectively and this difference is statistically significant ($p\leq 0.05$).The majority of the studied urban population worked as employee/ specialist (mother 72.4% and husbands 88%) while the majority of studied rural women 57.9% were housewives and the most frequent of their husbands 47.6% were employee/ specialist and this difference is statistically significant ($p\leq 0.05$).

Table (4): Socio-demographic data of the studied women.

Residence		Urban		Rural		X^2	P value
		No	%	No	%		
Family members	<5	122	73.1%	155	66.5%	1.9	> 0.05
	≥5	45	26.9%	78	33.5%		
	Total	167	100%	233	100%		
Earning family members	1member	45	26.9%	142	60.9%	FET* =49.5	≤ 0.05
	2members	119	71.3%	83	35.6%		
	3members	3	1.8%	8	3.4%		
	Total	167	100%	233	100%		
Educational level of children	All go/ went to school	167	100.%	174	74.7%	49.6	≤ 0.05
	<50% go /went to school	0	0.0%	12	5.2%		
	≥50% go /went to school	0	0.0%	12	5.2%		
	None go /went to school	0	0.0%	35	15.0%		
	Total	167	100%	233	100%		
Type of home	Owned and ≥ 4 rooms	6	3.6%	61	26.2%	FET* =41.6	≤ 0.05
	Owned and <4 rooms	113	67.7%	132	56.7%		
	Rented and ≥4 rooms	2	1.2%	7	3.0%		
	Rented and <4 rooms	46	27.5%	33	14.2%		
	Total	167	100%	233	100%		
Crowdness index	≤ one to each room	63	37.7%	94	40.3%	0.28	> 0.05
	> one to each room	104	62.3%	139	59.7%		
	Total	167	100%	233	100%		
Family income	We borrow on it	8	4.8%	24	10.3%	149.9	≤ 0.05
	Just enough for usual needs	33	19.8%	161	69.1%		
	Can face emergencies	51	30.5%	44	18.9%		
	Enable saving /investment	75	44.9%	4	1.7%		
	Total	167	100%	233	100%		
Sources of health services	Private health care services	125	74.9%	38	16.3%	140.7	.000
	Health insurance	0	0.0%	16	6.9%		
	Free governmental services	19	11.4%	79	33.9%		
	More than one choice	23	13.8%	97	41.6%		
	I take the usual treatment	0	0.0%	3	1.3%		
	Total	167	100%	233	100%		

*FET=Fisher's exact test

Table 4 shows that regarding number of earning family members, urban women who had 2 earning family members were 71.3%, while 60.9 % of the rural women had only 1 earning family member and the results are statistically significant ($p \leq 0.05$) but there is no statistically significant difference between urban and rural women as regard number of family members ($p > 0.05$). All the urban women have children who go / went to school compared to 74.7% of rural women's children and the results are statistically significant ($p \leq 0.05$).

In both urban and rural women 67.7% and 56.7% respectively have owned their home and it was < 4 rooms, and the results are statistically significant ($p \leq 0.05$). Nearly about one half of the urban women could keep and invest from their income while the income of 69.1% of the rural women was just enough for their usual and the results are statistically significant ($p \leq 0.05$).

Urban women who seek private health care services constituted 74.9% while 41.6% of the rural women seek wither private health care services or the health insurance or the free governmental services and the results are statistically significant ($p \leq 0.05$).

Table (5): Distribution of sources of health information of the studied group according to residence:

Sources of health services		Urban		Rural		X^2	P-value
		No	%	No	%		
Printed sources of health information	Yes	124	74.2%	43	18.5%	126	≤ 0.05
	No	43	25.8%	190	81.5%		
	Total	167	100%	233	100%		
TV/radio	Yes	158	94.6%	212	91.0%	1.8	> 0.05
	No	9	5.4%	21	9.0%		
	Total	167	100%	233	100%		

Table 5 shows that audiovisual sources of mass media (TV and radio) were important sources of health information for both urban and rural women (94.6% and 91% respectively) and this

difference is not statistically significant (p> 0.05) while the printed sources of mass media were important mainly for urban women than rural women (74.2% and 18.5% respectively) and this difference is statistically significant (p≤.005).

Table (6): Socio-economic level of the studied women:

Socio-economic level	No	%
Low	86	21.5%
Middle	184	46%
High	130	32.5%
Total	400	100

Table 6 shows that 46% of the studied women were of middle socio-economic level and 32.5% and 21.5% were of high and low socio-economic levels respectively.

Table (7): Percent distribution of socio-economic score of the studied women according to residence:

Residence	Socio-economic level						X^2	P value
	Low		Middle		High			
	No	%	No	%	No	%		
Rural	75	87.2%	142	77.1%	19	14.6%	159.28	≤ 0.05
Urban	11	12.9%	42	22.9%	111	85.3%		
Total	86	100%	184	100%	130	100%		

Table 7 shows that the majority of low and middle socioeconomic level studied women (87.2% and 77.1% respectively) were from rural communities while the majority of high socioeconomic level women (85.3%) were from urban communities and the results are statistically significant (≤ 0.05).

II - Medical and obstetric history of the studied women

Table (8): Obstetric history of female participants according to residence:

Obstetric history		Residence				Fisher's exact test	P value
		Urban		Rural			
		No	%	No	%		
No of pregnancies	≤ 2	97	58%	111	47.6%	11.59	≤.05
	3 times	51	30.5%	64	27.5%		
	4 or more	19	11.5%	58	24.9%		
	Total	167	100%	233	100%		
No of live children	≤ 2 child	124	74.2%	134	57.5%	23.67	≤.05
	3 children	38	22.8%	56	24.0%		
	4 or more children	5	3.0%	43	18.5%		
	Total	167	100%	233	100%		

Table 8 shows that there is a statistically significant difference between urban and rural women as regard number of pregnancies (p≤.005) and the studied women who had ≤ 2 pregnancies constituted the majority (58% and 47.6% of the urban and rural women respectively). Regarding number of live children, 74.2% urban and 57.5% of rural women had family planning (≤ 2 child) and the results are statistically significant (p≤.005).

Table (9): Number of pregnancies according to socioeconomic score of the studied women:

No of pregnancies	Low		Middle		High		X^2	P value
	No	%	No	%	No	%		
≤2 pregnancies	29	33.7%	94	51%	84	64.6%	27.117	≤.05
3 pregnancies	26	30.2%	55	29.9%	32	24.6%		
≥4 pregnancies	31	36.1%	35	19%	14	10.8%		
Total	86	100%	184	100%	130	100%		

Table 9 shows that the majority of high socioeconomic level women and nearly half of middle socioeconomic level women had ≤ 2 children while 36.1% of low socioeconomic level women had ≥4 children and results are statistically significant (p≤.005).

Table (10): Obstetric history of mothers during past pregnancies *:

Past pregnancies		No	%
Abortion	Abortion	76	19.0
	No abortion	324	81.0
	Total	400	100
Stillbirth	Stillbirth	15	3.8
	No stillbirth	385	96.2
	Total	400	100
LBW	LBW	26	6.5
	No LBW	374	93.5
	Total	400	100
Neonatal death in the 1st week	Neonatal death	8	2.0
	No neonatal death	392	98.0
	Total	400	100
Diabetes of pregnancy	Diabetic	12	3.0
	Normal	388	97.0
	Total	400	100
Eclampsia	Eclamptic	24	6.0
	Normal	376	94.0
	Total	400	100

*Not including the last pregnancy

Table 10 shows history of past pregnancies 19% of the studied women reported having abortion, 6.5 % reported having LBW, 6% reported having eclampsia and 2% reported neonatal death in the 1st week pregnancies.

Table (11): Obstetric history of mothers during the last /current pregnancy:

The last (present) pregnancy		No	%
Bleeding during pregnancy	Bleeding	16	4
	No bleeding	384	96
	Total	400	100
Secretion and burning micturation	Secretions	86	21.5
	No secretions	314	78.5
	Total	400	100
Anemia	Anemic	164	41.0
	Not anemic	236	59.0
	Total	400	100
Gestational diabetes	Diabetic	25	6.2
	Not diabetic	375	93.8
	Total	400	100
Preeclampsia	eclamptic	47	11.8
	Normal	353	88.2
	Total	400	100
Little fetal movement	Little fetal movement	15	3.8
	Normal	385	96.2
	Total	400	100
Mal presentation of fetus	Mal presentation	11	2.8
	Normal	389	97.2
	Total	400	100

Table11 shows that during the last/ present pregnancy , anemia was reported by 41% of the studied women ,secretions and burning micturation by 21.5%, preeclampsia by 11.8%, gestational diabetes by 6.2%, little fetal movement by 3.8%, malpresentation of fetus by 2.8%, bleeding in the 1st 3 months by 2.2% and antenatal bleeding by 1.8%.

III -Women perception about ANC services

Table (12): Women perception about ANC importance according to residence:

Women perception about antenatal care imprtnace:		Urban		Rural		X^2	P value
		No	%	No	%		
Importance level of ANC	Not important at all	0	0.0%	2	0.9%	FET*= 18	≤.05
	Not important	0	0.0%	1	0.4%		
	Important	24	14.4%	73	31.3%		
	Very important	143	85.6%	157	67.4%		
	Total	167	100%	233	100%		
Important woman for ANC	Every woman	159	95.2%	214	92.2%	FET*= 2.17	> 0.05
	primigarvida	1	0.6%	4	1.7%		
	woman who has pregnancy problems	7	4.2%	13	5.6%		
	woman who had previous abortion	0	0.0%	1	0.4%		
	Total	167	100%	233	100%		

FET*= Fisher's exact test

Table 12 shows that the majority (85.6%% and 67.4% in urban and rural women respectively) perceived ANC as very important service and the results are of statistically significant importance **(**p ≤.005) while there is no significant statistical difference between urban and rural women regarding perception of important woman for ANC (p value >0.05).

Table (13): Preferable pattern of antenatal care utilization among studied women according to residence:

Preferable pattern of antenatal care utilization:		Urban		Rural		Fisher's exact test	P value
		No	%	No	%		
Preferred time of starting ANC	Once she know she is pregnant	138	82.6%	204	87.6%	4	> 0.05
	In the first 3 months	29	17.4%	27	11.6%		
	I don't know	0	0.0%	2	0.8%		
	Total	167	100%	233	100%		
Preferred No of ANC visits	4 or 5 times	0	0.0%	5	2.1%	13.8	≤ 0.05*
	One monthly	61	36.5%	108	46.4%		
	As the doctor say	106	63.5%	114	48.9%		
	I don't know	0	0.0%	6	2.5%		
	Total	167	100%	233	100%		
Preferable place for ANC	Health unit	10	6.0%	43	18.5%	14.85	≤.05*
	Private doctor	157	94.0%	190	81.6%		
	Total	167	0.0%	2	0.9%		
ANC in future pregnancies	Seek ANC in normal pregnancy	162	97.0%	208	89.3%	$\mathbf{X^2}$=8.39	≤.05*
	Seek ANC if complicated	5	3.0%	25	10.7%		

Table 13 shows a significant statistical difference (p≤.005) between urban and rural regarding number of ANC visits and the most frequent of the studied urban women (63.5%) and rural women (48.9%) go for ANC as the doctor say. Women who reported that ANC is better in a private clinic constituted the majority (94% in urban and 81.6% in rural) and the results are statistically significant (p≤.005). The majority (97% of the urban women and 89.3% of the rural women) will seek ANC in their future normal pregnancies and the results was statistically significant (p≤.005) while there is no a significant statistical difference (p >0.05) between urban and rural regards the preferred time of starting ANC and the majority of both urban women

(82.6%) and rural women (87.6%) reported that they should start ANC once they know they are pregnant.

Chart (1) Antenatal care importance level according residence:

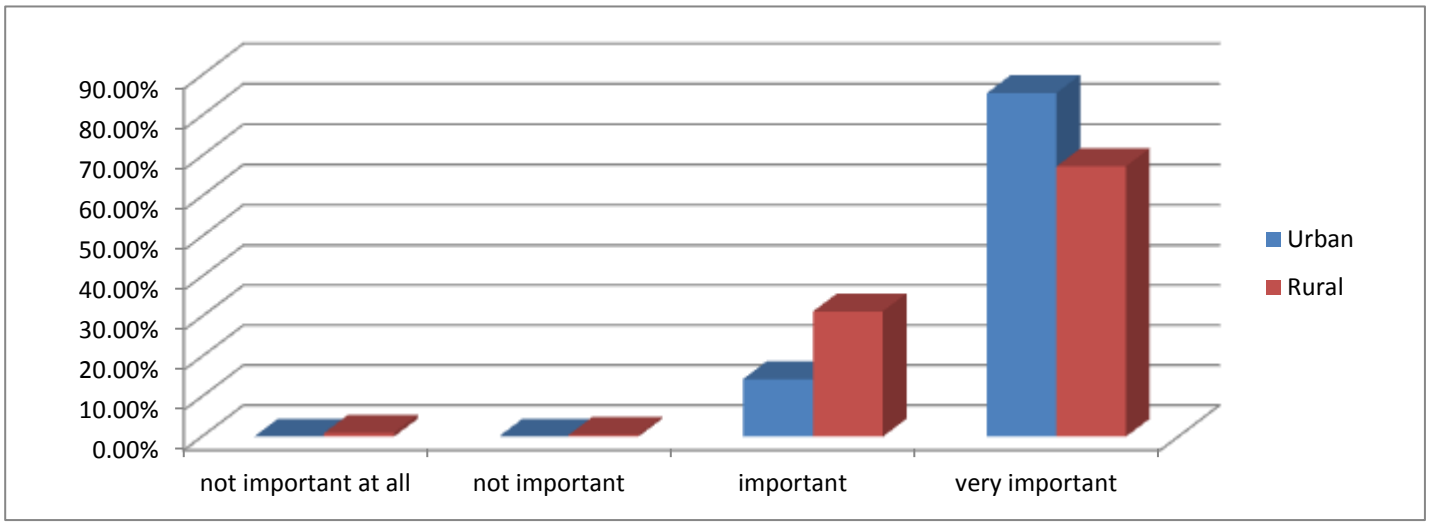

Chart (2) perception of preferable place for ANC according to residence:

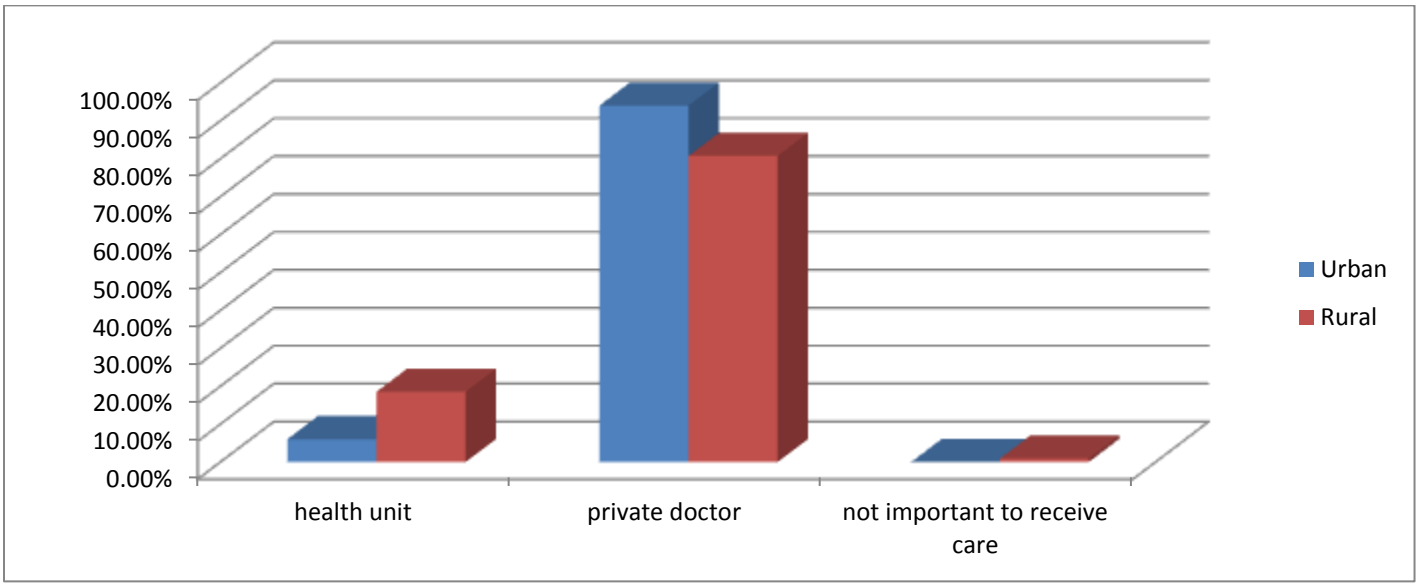

Table (14): Women's knowledge about important ANC components:

Components of ANC		No	%
Blood pressure measurement	Important	398	99.5
	Not important	2	.5
	Total	400	100
Weight measurement	Important	398	99.5
	Not important	2	.5
	Total	400	100
Blood and urine analysis	Important	398	99.5
	Not important	2	.5
	Total	400	100
Iron intake	Important	398	99.5
	Not important	2	.5
	Total	400	100
Calcium intake	Important	398	99.5
	Not important	2	.5
	Total	400	100
Tetanus toxoid vaccination	Important	398	99.5
	Not important	2	.5
	Total	400	100
Ultrasound	Important	398	99.5
	Not important	2	.5
	Total	400	100
Giving advice any pregnant to seek ANC	Giving advice	398	99.5
	No	2	.5
	Total	400	100

Table 14 shows that almost all (99.5%) of the studied women recognized all the important components of ANC (Blood pressure measurement, weight measurement, blood and urine analysis , iron intake, calcium intake, tetanus toxoid vaccination and ultrasound follow up) and they will advice any pregnant woman to seek ANC.

IV -Pattern of utilization of the ANC service:

Table (15): Utilization of antenatal care among female participants according to residence:

Utilization of antenatal care		Urban		Rural		X^2	P value
		No	%	No	%		
Utilization of ANC in previous pregnancies	Utilization	167	100%	233	100%	1.44	>0.05
	No utilization	0	0.0%	0	0.0%		
	Total	167	100%	233	100%		
Utilization of ANC in the last pregnancy	Utilization	167	100%	229	98.3%	2.89	> 0.05
	No utilization	0	0.0%	4	1.7%		
	Total	167	100%	233	100%		
Starting time of ANC in the last pregnancy	first 3 months	167	100%	165	72%	FET*=55.4	≤ 0.05
	from the 4th to the 6th month	0	0.0%	60	26.2%		
	from the 7th to the 9th month	0	0.0%	4	1.7%		
	Total	167	100%	229	100%		
No of ANC visits in the last pregnancy	less than 4 times	0	0.0%	4	1.7%	FET*=30	≤ 0.05
	4 times	4	2.4%	44	19.3%		
	≥5 times	163	97.6%	181	79%		
	Total	167	100%	229	100%		
Place of ANC	health (center or unit)	17	10.2%	51	22.3%	9.93-	≤ 0.05
	private clinic	150	89.8%	178	77.7%		

FET*= Fisher's exact test

Table 15 shows that all the studied urban and rural women utilized ANC during their previous pregnancies with no statistical significant difference there (p>0.05). All the studied urban women and 98.3% of the studied rural women utilized ANC during their last pregnancy with no statistical significant difference there (p>0.05). All the studied urban women started their ANC in the 1st 3 months of pregnancy while about 3 fourths of the studied rural women did so

and the results are statistically significant (p value≤ 0.005). Regarding number of ANC visits the majority (97.6% and 79%of urban and rural women respectively) had ≥5 visits during their last pregnancy and the results are statistically significant (p value≤ 0.005). Studied women who attended their ANC at health center or unit constituted 22.3% and 10.2% in rural and urban respectively and the results are statistically significant (p= ≤ 0.005).

Chart (3) Starting time of ANC in the last pregnancy according to residence:

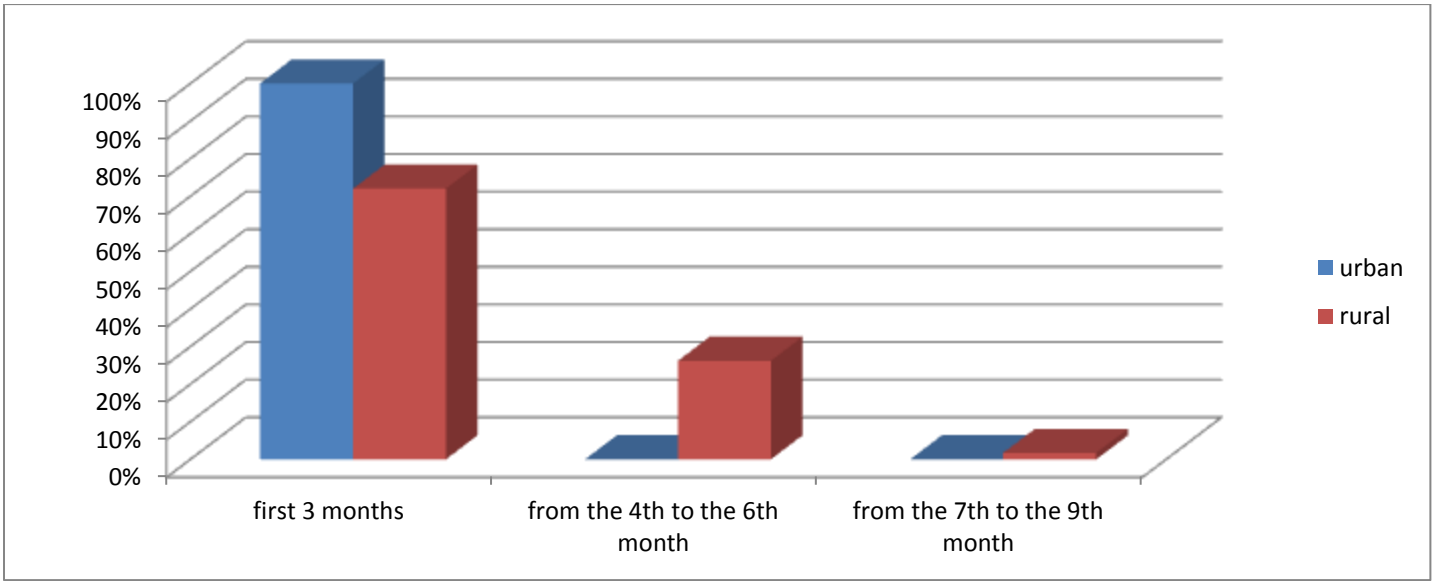

Chart (4) Number of ANC visits in the last pregnancy according to residence:

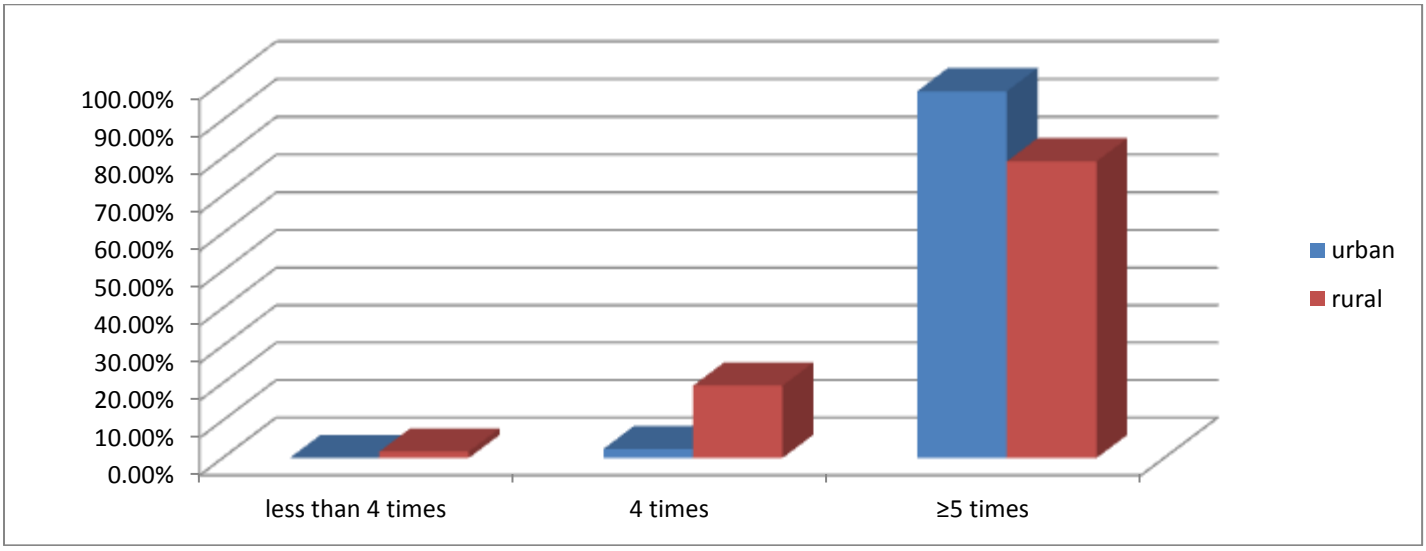

Table (16): Sources of information for seeking ANC in the studied women according to residence:

Sources of information about ANC		Urban		Rural		X^2	P value
		No	%	No	%		
Mothers	Yes	111	66.5%	153	66.8%	17.34	> 0.05
	No	56	33.5%	76	33.2%		
	Total	167	100%	229	100%		
Friends	Yes	14	8.4%	58	25.3%	18.6	≤ 0.05
	No	153	91.6%	171	74.7%		
	Total	167	100%	229	100%		
Mass media	Yes	12	7.2%	84	36.7%	45.7	≤ 0.05
	No	155	92.8%	145	63.3%		
	Total	167	100%	229	100%		
Her own self	I know alone	47	28.1%	43	18.8%	4.8	≤ 0.05
	I don't know	120	71.9%	186	81.2%		
	Total	167	100%	229	100%		

Table 16 shows that regarding the source of information about ANC importance, there is a statistical significant difference between urban and rural women who were informed by friends, media and who knew by their own self ($p \leq 0.005$) while there is no statistical significant difference in those who were informed by mothers ($p > 0.05$).

Chart (5): Sources of information for seeking ANC in according residence:

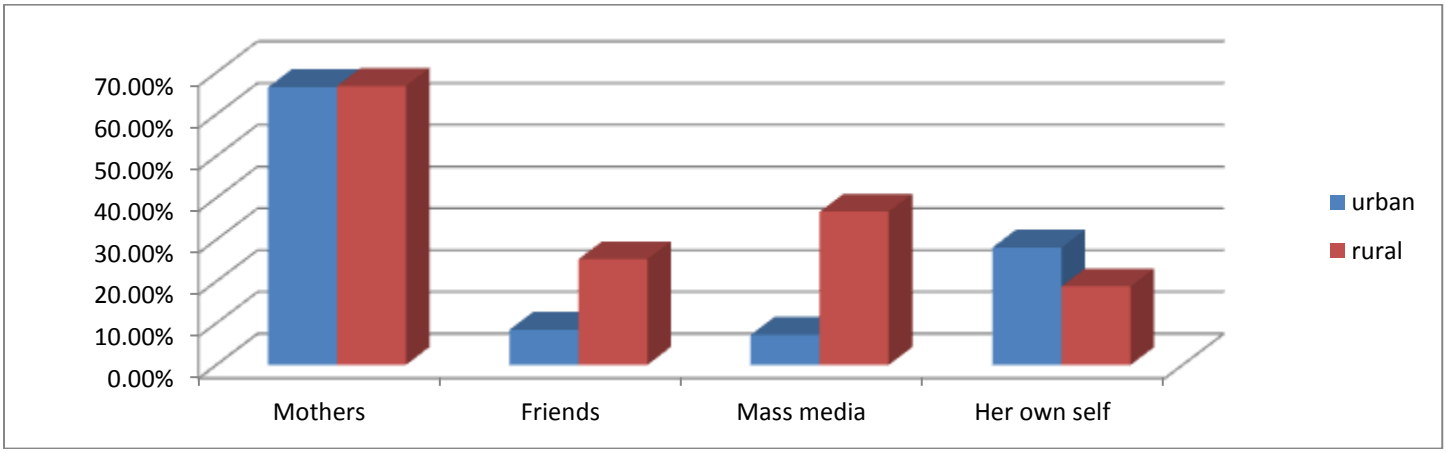

Table (17): Persons encouraging seeking ANC in the studied women according residence:

Persons encouraging seeking ANC		Urban		Rural		X^2	P value
		No	%	No	%		
Husbands	Yes	81	48.5%	158	69.0%	16.9-.000*	≤ 0.05
	No	86	51.5%	71	31.0%		
	Total	167	100%	229	100%		
Mothers	Yes	90	53.9%	92	40.2%	7.3	≤ 0.05
	No	77	46.1%	137	59.8%		
	Total	167	100%	229	100%		
Mother in law	Yes	4	2.4%	15	6.6%	3.6-	≤ 0.05
	No	163	97.6%	214	93.4%		
	Total	167	100%	229	100%		
By my self	I went alone	26	15.6%	26	11.4%	0.74	>0.05
	I didn't go alone	141	84.4%	203	88.6%		
	Total	167	100%	229	100%		

Table 17 shows that regarding persons of encouraging for seeking ANC, there is a statistical significant difference between urban and rural women who were encouraged by their husbands, mothers and by mothers in law ($p \leq 0.005$) while there is no statistical significant difference in those who went for ANC by their own self ($p > 0.05$).

Chart (6): Persons encouraging seeking ANC in the studied women according residence:

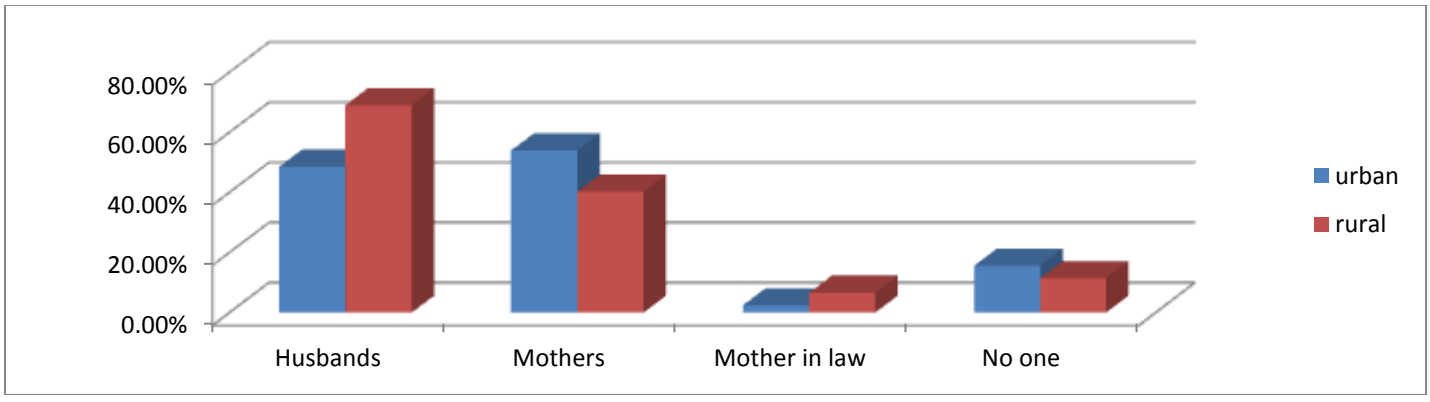

Table (18): Barriers of utilization of PHC services in women who didn't attend ANC there regarding residence:

Barriers		Urban		Rural		X^2	P value)
		No	%	No	%		
Services not available	Yes	143	95.3%	155	87.1%	6.67	≤ 0.05
	No	7	4.7%	23	12.9%		
	Total	150	100%	178	100%		
Long waiting time	Yes	4	2.7%	30	16.9%	17.6	≤ 0.05
	No	146	97.3%	148	83.1%		
	Total	150	100%	178	100%		
Unavailability of specialists	yes	38	25.3%	126	70.8%	67.3	≤ 0.05
	no	112	74.7%	52	29.2%		
	Total	150	100%	178	100%		
Unavailability of medicines	Yes	1	0.7%	34	19.1%	29.02	≤ 0.05
	No	149	99.3%	144	80.9%		
	Total	150	100%	178	100%		
Lack of female specialists	Yes	1	0.7%	9	5.1%	FET= 5.3	≤ 0.05
	No	149	99.3%	169	94.9%		
	Total	150	100%	178	100%		
Long distance	Yes	2	1.3%	9	5.1%	3.5	> 0.05
	No	148	98.7%	169	94.9%		
	Total	150	100%	178	100%		
Difficult transportation	Yes	1	0.7%	8	4.5%	FET=4 .5-	≤ 0.05
	No	149	99.3%	170	95.5%		
	Total	150	100%	178	100%		
Expensive ttt	Yes	0	0.0%	12	6.7%	10.49	≤ 0.05
	No	150	100.0%	166	93.3%		
	Total	150	100%	178	100%		

Tables 18 shows that there is a significant statistical difference between urban and rural women who didn't attend ANC at the health centers (units) due to; lack of enough services, long time waiting, unavailability of the specialists, unavailability of medicines, difficult

transportation, expensive ttt and absence of female physicians ($p \leq 0.05$) while there is no significant statistical difference between urban and rural women as regard long distance difficulty ($p > 0.05$). Regarding barriers for utilization of PHC facilities 95.3% of the studied urban women and 87.1% of the studied rural women didn't utilize it due to lack of enough services meanwhile 25.3% of the studied urban women and 70.8% of the studied rural women didn't utilize PHC facilities due to absence of specialists. On the other hand long waiting time, lack of medicine and female physicians, long distance, difficult transportation and expensive ttt constituted the barriers for utilization of PHC facilities in $\leq 2.7\%$ of the studied urban women and $\leq 19.1\%$ of the studied rural women.

Chart (7): Barriers of utilization of PHC services in women who didn't attend ANC there regarding residence:

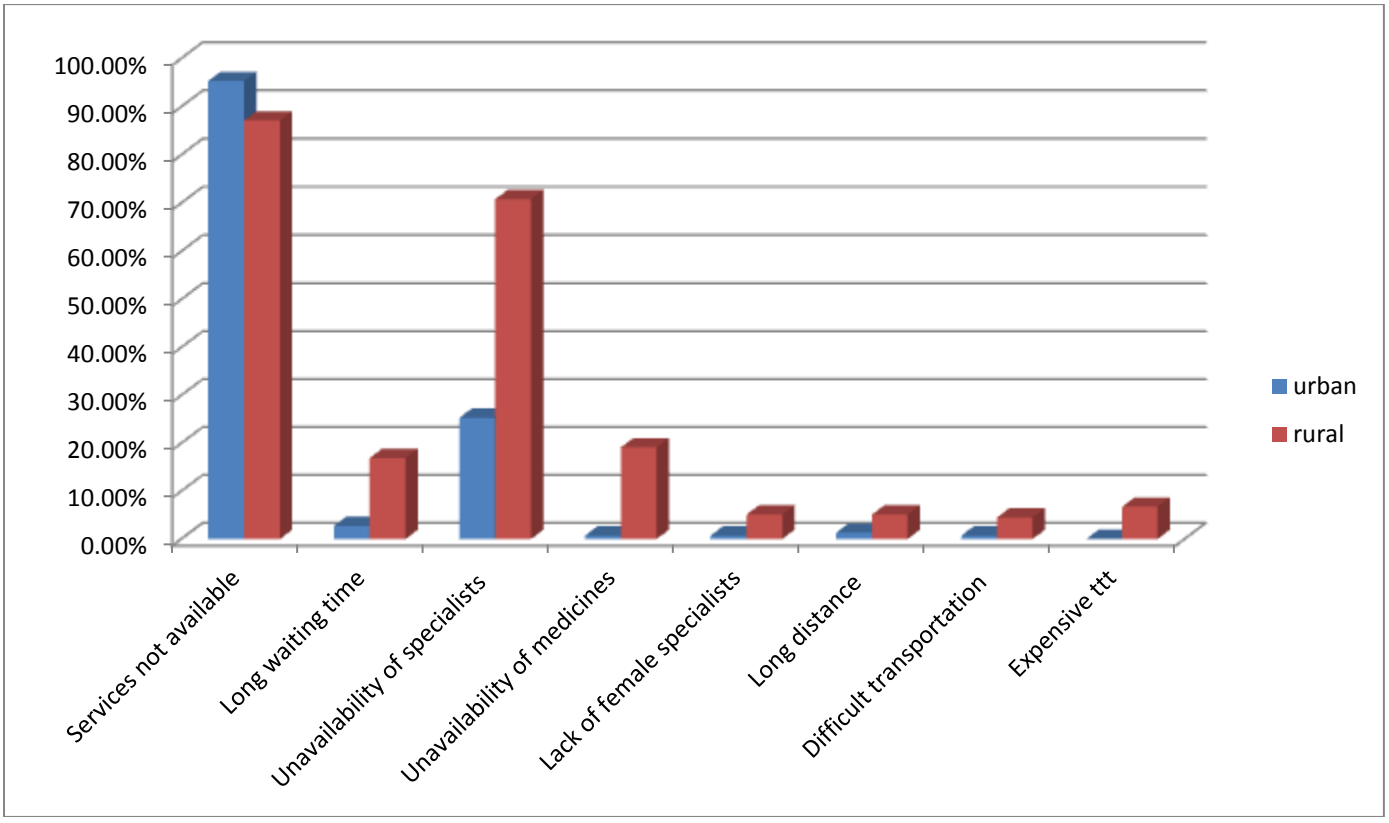

Table (19): Barriers of utilization of PHC services in women who didn't attend ANC there according to socioeconomic level:

Barriers		Low		Middle		High		Fisher's exact test	P value
		No	%	No	%	No	%		
Services not available	Yes	45	86.5%	125	85.6%	128	98.5%	15	≤ 0.05
	No	7	13.5%	21	14.4%	2	1.5%		
	Total	52	100%	146	100%	130	100%		
Long waiting time	Yes	9	17.3%	20	13.7%	5	3.8%	10.4	≤ 0.05
	No	43	82.7%	126	86.3%	125	96.2%		
	Total	52	100%	146	100%	130	100%		
Unavailability of specialists	Yes	37	71.2%	91	62.3%	36	27.7%	44	≤ 0.05
	No	15	28.8%	55	37.7%	94	72.3%		
	Total	52	100%	146	100%	130	100%		
Unavailability of medicines	Yes	10	19.2%	21	14.4%	4	3.1%	14	≤ 0.05
	No	42	80.8%	125	85.6%	126	96.9%		
	Total	52	100%	146	100%	130	100%		
Long distance	Yes	3	5.8%	8	5.5%	0	0.0%	7.5	≤ 0.05
	No	49	94.2%	138	94.5%	130	100%		
	Total	52	100%	146	100%	130	100%		
Difficult transportation	Yes	3	5.8%	6	4.1%	0	0.0%	6.5	≤ 0.05
	No	49	94.2%	140	95.9%	130	100%		
	Total	52	100%	146	100%	130	100%		
Expensive ttt	Yes	6	11.5%	6	4.1%	0	0.0%	14.2	≤ 0.05
	No	46	88.5%	140	95.9%	130	100.%		
	Total	52	100%	146	100%	130	100%		
Lack of female specialists	Yes	4	7.7%	6	4.1%	0	0.0%	8.4	≤ 0.05
	No	48	92.3%	140	95.9%	130	100%		
	Total	52	100%	146	100%	130	100%		

Table 19 shows that there is a significant statistical difference between women of different socio-economic levels who didn't attend ANC at the health centers (units) due lack of enough services, long time waiting, unavailability of the specialists, unavailability of medicines, long distance,

difficult transportation, expensive ttt and absence of female physicians ($p \leq 0.05$). The majority of women of all levels didn't attend ANC at PHC facilities because absence of enough services. The lack of specialists prevented 71.2% of the low level women and 62.3% of the middle level from utilization of PHC facilities, meanwhile unavailability of the drugs was a barrier for 19.2% of the low level women and 14.4% of the middle level women while long time waiting in the centers/units was a barrier for 17.3% of women of the low level, 13.7% of the middle level and y 3.8% of women of the high level.

Chart (8): Barriers of utilization of PHC services in women who didn't attend ANC there according to socioeconomic level:

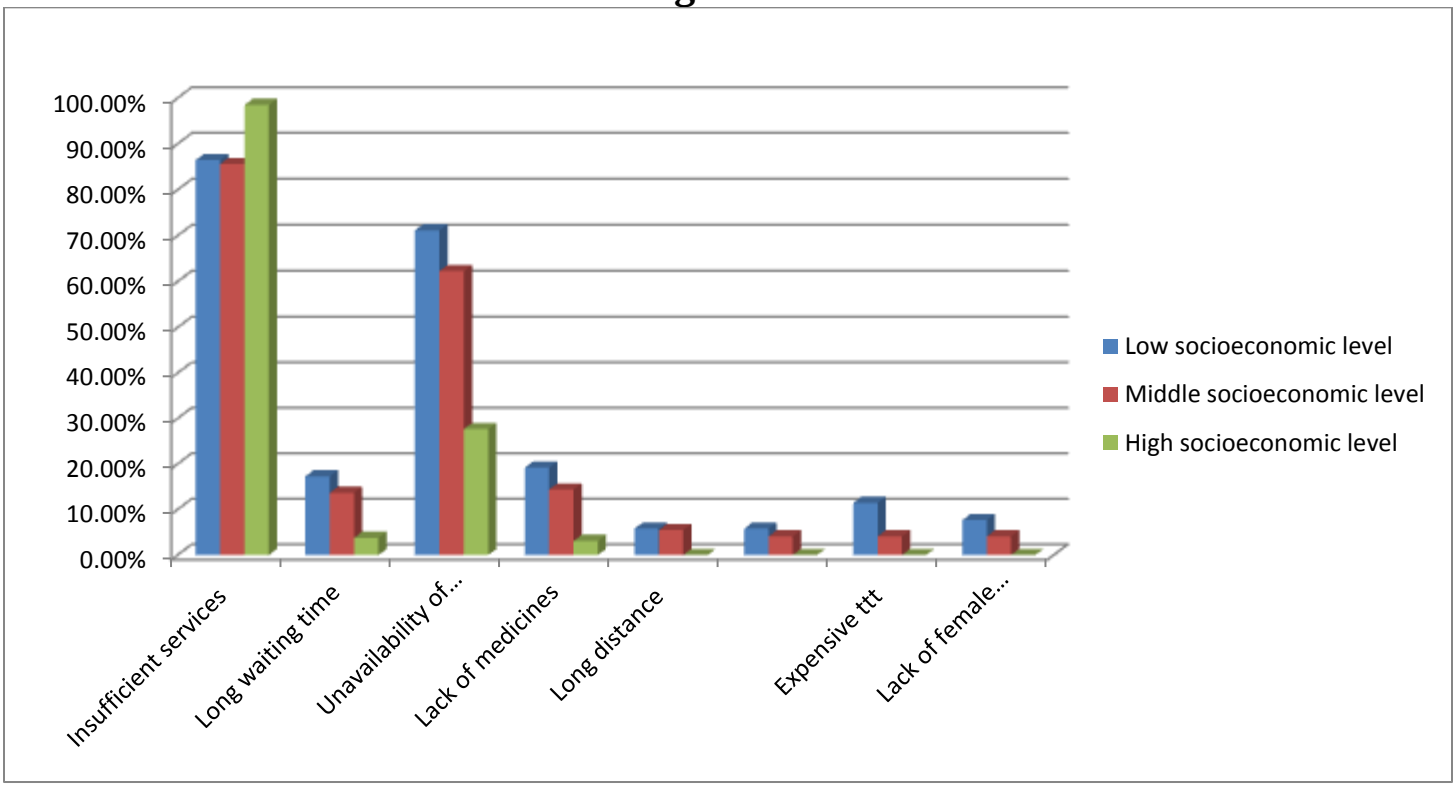

Table (20): Pattern of accessibility for ANC services in PHC facilities according residence:

Pattern of accessibility		Urban		Rural		Fisher's exact test	P value
		No	%	No	%		
Time needed to arrive to health center	Less than 30 min.	10	58.8%	30	58.8%	0.994	> 0.05
	30 min. to 1 hour	5	29.4%	17	33.3%		
	1 to 1 hour and half	2	11.8%	3	5.9%		
	1 hour and half to 2 hours	0	0.0%	1	2.0%		
	Total	17	100%	51	100%		
Facility of transportation	Walking	3	17.6%	28	54.9%	12.6	≤ 0.05
	Motorcycle	0	0.0%	6	11.7%		
	Public transport	14	82.4%	17	33.3%		
	Total	17	100%	51	100%		
Waiting time	Less than 30 min.	1	5.9%	12	23.5%	4.5	> 0.05
	30 min. to 1 hour	10	58.8%	22	43.1%		
	1 to 1 hour and half	3	17.6%	12	23.5%		
	1 hour and half to 2 hours	3	17.6%	4	7.8%		
	More than 2 hours	0	0.0%	1	2.0%		
	Total	17	100%	51	100%		

Table 20 shows that there is a significant statistical difference between urban and rural women who go to their ANC at health center (unit) through different means of transportation ($p \leq 0.05$) and the majority of the studied urban women (82.4%) go by public transportation while the most frequent of the studied rural women(54.9%) go there by walking. On the other hand there is no there is a significant statistical difference between urban and rural attended PHC facilities regarding time needed to arrive to it and waiting time there ($p > 0.05$).

Table (21): Barriers confronting women attended PHC facilities for ANC according residence:

Barriers		Urban		Rural		X^2	P value
		No	%	No	%		
Difficulties in accessibility	Yes	7	41.2%	9	17.6%	3.9	≤0.05
	No	10	58.8%	42	82.4%		
	Total	17	100%	51	100%		
Long waiting time	Yes	9	52.9%	26	51.0%	0.02	>0.05
	No	8	47.1%	25	49.0%		
	Total	17	100%	51	100%		
High costs	Yes	0	0.0%	4	7.8%	1.5	>0.05
	No	17	100 %	47	92.2%		
	Total	17	100%	51	100%		
No difficulty	Yes	7	41.2%	13	25.5%	1.5	>0.05
	No	10	58.8%	38	74.5%		
	Total	17	100%	51	100%		

Table 21 shows that regarding barriers confronting women attended PHC facilities, there is a significant statistical difference between the studied urban and rural women who met accessibility difficulties (p ≤0.05) while there is no statistical significant difference between urban and rural women who met long waiting time difficulties, high cost difficulties and who met no difficulty(p >0.05).

Chart (9): Barriers confronting women attended PHC facilities for ANC according residence:

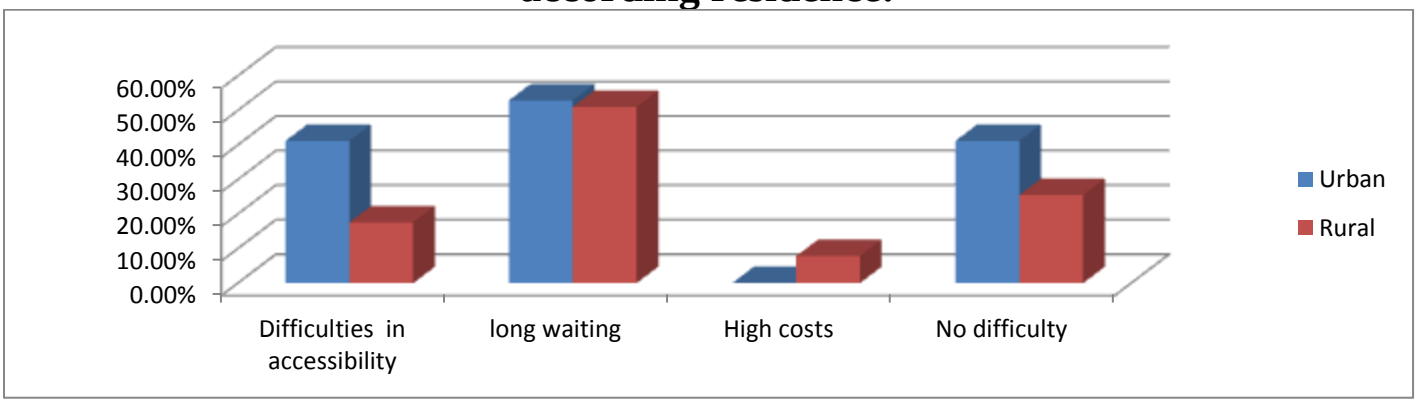

Table (22): Level of satisfaction among women attended PHC facilities for ANC according to residence:

Satisfaction level	Urban		Rural		Fisher's exact test	P value
	No	%	No	%		
Not satisfied at all	0	0.0%	5	9.8%	2	>0.05
Not satisfied	5	29.4%	16	31.4%		
Satisfied	10	58.8%	26	51.0%		
Very satisfied	2	11.8%	4	7.8%		
Total	17	100%	51	100%		

Table 22 shows that the majority of both studied urban and rural women who attended PHC facilities were satisfied with service and the results are not statistically significant ($p>0.05$).

Among the studied population 1% didn't utilize ANC during their last pregnancy, 75% of them didn`t use it because their pregnancy was normal while the other 25% of them didn’t utilize it because they knew everything about pregnancy as they have past experiences

V-Women's autonomy

Table (23): Distribution of the studied women according to autonomy score:

Autonomy score	No	%
Low	234	57.8
Moderate	135	33.3
High	31	7.7
Total	400	100%

Table 23 shows that 57.8% of our participant women had low autonomy score, 33.3% had moderate autonomy score and 7.7% had high autonomy score.

Table (24): Autonomy of the studied women according to residence:

Residence	Autonomy score categories						X^2	P value
	Low		Moderate		High			
	No	%	No	%	No	%		
Rural	130	55.6%	87	64.4%	16	51.6%	3.390	>0.05
Urban	104	44.4%	48	35.6%	15	48.4%		
Total	234	100%	135	100%	31	100%		

Table 24 shows that the most frequent of the studied rural women (64.4%) had moderate level of autonomy while nearly half of the studied urban women (48.4%) had high level of autonomy and the results are of no statistical significant difference (p value= >0.05).

DISCUSSIONS

Antenatal care is universally considered important for women and children. Nearly four million neonatal deaths and 500,000 maternal deaths are estimated to occur annually in the world. About 98.0% of these occur in low and middle income countries. Antenatal care has been proven to be effective in improving pregnancy outcomes through early detection and management of pregnancy complications (***Tran et al., 2011)***.

Although several studies have been done focusing ANC services, studies dealing with this issue in Kaluybia governorate (a community known with its high fertility motives ***(EHDR, 2010)***) have not been yet well accomplished. Among two groups of women attending urban and rural health care units for obtaining any maternal health care service, this study was conducted. The specific objectives were to describe the utilization pattern of ANC services, explore women perception about ANC services and identify factors affecting their utilization pattern of ANC services in their latest completed pregnancy.

Our study is a descriptive cross sectional study in 2 PHC facilities at Benha district (400 studied women from which 83.75% from MCH at Benha city and 16.25% from Gamgara health unit). All of our participant women (58.25% from rural areas and 41.75% from urban communities) had utilized of ANC during their previous pregnancies **(Table 1 and 15)**.

This study illustrated that women aging from 19 to less than 39 years were more likely to utilize ANC in comparison with the age group of ≥ 39 years (94.6% urban and 77.3% rural) **(Table 2)**.

This comes in consistent with **El-Zanaty, 2014**, who found that age is one of the important factors that influence ANC utilization and he found mothers aging 35 and over were less likely to receive ANC than younger mothers. In addition, **Bahilu et al., 2009** found that women whose age less than or equal to twenty years at the time of the first pregnancy were nearly three times more likely to use ANC than whose age at first pregnancy was more than twenty.

Also **Pandey and Karki, 2014** found that the relationship between age and the utilization of ANC services was statistically significant and women in lower age group were more likely to have ANC services for more than four times than the women in higher age group.

The possible explanation may be that the elderly women particularly in urban areas may find it embarrassing to have a child in such relatively old age and/ or seem careless or even depressed to have such pregnancy that is commonly unplanned and unwanted in that relatively old age while young women with their first pregnancy and child birth are seemed to be more careful about their pregnancy than multi- gravida or older women who tend to trust the previous experiences they had and too busy with the other children. Also, young women may be likely to be educated than older women.

This was inconsistent with a study conducted in Vietnam by **Tran et al., 2011** who found that young rural women (less than 25 years old) were less likely to have sufficient access to ANC services and explained that it could be attributed to less knowledge and experience about ANC for younger women than older ones in rural areas.

Women and their husbands' education was found to be positively associated with the use of antenatal care in both rural and urban areas **(Table 3)**, the majority of the studied urban population were of higher level of education (mother 83.2% and husbands 82.7%) and the majority of studied rural population were educated (mothers 61.8% and husbands 67.8%) .This was consistent with a comparative study of three major states of India by **Pathak et al., 2010** , a study conducted in Nigeria by **Dahiru and Oche, 2015** and a study in India by **Adhikari et al.,2016** and another study in India by **Gupta et al., 2017** which demonstrated that the women living in urban areas with post primary education, were more likely to receive prenatal care than their counterpart groups. This could reflect the importance of education in raising the perception of people about the value of seeking health care especially during un-usual health events as what happens during pregnancy ***(Gupta et al., 2017; Adhikari et al., 2016; Dahiru and Oche, 2015 and Pathak et al., 2010).***

The findings showed that the majority of the studied urban women (72.4 %) who utilized ANC worked as employee/ specialist while the majority of studied rural women (57.9%) were housewives

(Table 3) and this reflects that employment status doesn't play significant role in ANC utilization among the women weather urban or rural .

This finding is inconsistent with a study conducted in Nigeria by **Babalola, 2012** who found that women employment status was associated with antenatal care use in the rural areas but not associated with it in the urban areas and the possible explanation may be due to different empowerment between rural Egyptian and Nigerian women.

Other studies found that occupation is strongly associated with ANC utilization by women ***(Graner et al., 2010 and Malqvist et al., 2010)***. On the contrary, **Hamed, 2014** in Egypt found that non-working women were five times more likely to utilize ANC than working women in their latest completed pregnancy and this could be explained by the fact that not working women may have relatively more spare time and less busy if compared to the working women.

This study shows that mass media were important sources of health information for both urban and rural women (94.6% and 91% respectively) **(Table 5)** and this agrees with **Gupta et al., 2017** ; **Jahan and Jahan, 2016; Karmaker and Rabbi , 2015 and Pandey et al., 2014** who found that the exposure to mass media increases the chances of attending ANC services .This could reflect the strong significant efforts done by mass media in Egypt in raising the awareness of people and modifying their behavior.

As our participant women were of low, middle and high socio-economic levels according to **El Gelany** score **(Table 6)**, this study reflects poor association between socio-economic level and ANC utilization and this disagreed with **Rani et al., 2008 and Majrooh et al., 2015** who found that the ANC coverage was linearly increasing with better social developmental ranking.

Also **Gupta et al., 2017; Jahan and Jahan, 2016; Pandey and Karki, 2014; Hajizadeh et al., 2014 and Shahjahan et al., 2012** found that women in families with high income were more likely to receive ANC services than the women in the families with low income. This could be explained by the fact that as the socio-economic level increase, the awareness and care seeking behavior also increase so the women seek ANC caring for themselves and their babies also. The possible explanation may be due to better awareness about ANC importance and its impact among low socioeconomic levels in Egypt.

Our results revealed that women who had $\leq$ 2 child (both urban and rural) are more likely to utilize ANC **(Table 8)** and this was inconsistent with a study done in Nigeria by **Babalola, 2012** who found that the number of living children was associated with antenatal care use in the urban areas but not in rural areas ***(Babalola, 2012).***

Other studies showed that women with fewer number of children prefer to use ANC services as they place their first child at high value even in times of economic crisis ***(Pell et al., 2013 and Singh and Singh, 2014),*** whereas high parity mothers receive

experience from their past births and show lower concern in ANC utilization ***(Arthur, 2012).***

The possible explanation is that the mothers in Egypt whether urban or rural cares more about themselves whatever the number of children they have and this reflects the awareness of the Egyptian mothers about the importance of care seeking during pregnancy.

Our results revealed that the majority of the studied women had positive perceptions regarding ANC **(Table 12)** and this agreed with a study done in Thailand by **Iino et al, 2011** who found that that 59.91% of the study women had positive perceptions regarding ANC and this reflects great improvement in health education systems both in Africa and Southeast Asia.

The majority of the study women from both groups (94% of urban women and 81.6% of rural women) perceived the private clinic as the best facility that could be used for ANC (**Table 13**) and it is consistent with a study done in Northern Ethiopia by **Fesseha et al., 2014** which found that perception of poor quality of ANC service is higher (42.5%) among pregnant women who serve at governmental clinics compared to private facilities (10.2%).

Our study found that almost all the studied women (urban and rural) had a good knowledge about the essential components of an ANC **(Table 14).** This goes against **Hamed, 2014** who found that despite the adequate number of ANC visits experience by most of women in their latest completed pregnancy, their knowledge about

the essential components of an ANC visit was limited, and this limited awareness is likely to reflect the incomplete ANC package of services they have been received.

Also there is a study conducted in Kham district in Japan by **Yang et al., 2010** revealed that most of the respondents (73.9%) lacked sufficient knowledge about the essential components of an ANC visit meanwhile **Isatou et al., 2012**, found that the majority of women at both public and private facilities did not have sufficient information and education about the essential components of an ANC.

Manna PK et al., 2011 found that poor knowledge about ANC check-ups may be one of the main reasons for deplorable conditions of the women seeking ANC services.

These disparities in the results could be due to the activities and efforts done by the ministry of health and population in Egypt to raise the population awareness and knowledge about the ANC and its important components that can serve both the mothers and their babies and prevent a lot of risks that may occur during pregnancy that may lead to many adverse effects on mothers and unfavorable outcome of pregnancy.

This study revealed almost all the study women from both groups were covered by ANC in their latest completed pregnancy, with no significant statistical difference **(Table 15)** .This was consistent **El-Zanaty, 2014** who found that 90 percent of urban and

rural Egyptian mothers received antenatal care from a trained provider.

This was inconsistent with that found by **El Shirbiny et al, 2009** who found significant difference in ANC utilization between urban and rural areas in Beni-Suef governorate in Egypt. This could be explained by the fact that women in El Qalybia governorate both urban and rural are better educated and have more knowledge about care seeking behavior in addition that Lower Egypt governorates are more developed than Upper Egypt.

Regarding the proper time of registration for ANC (time of first ANC visit) there is a statistical significant difference between urban and rural women as urban women begin to utilize ANC earlier than rural ones (100% in urban and 72% in rural women) **(Table 15)**.

This was consistent with a study done in Vietnam by **Tran et al., 2011** who found that urban women utilize ANC much more early in pregnancy than rural women. Another study conducted also in Vietnam by **Duru et al., 2014** who found that more people booked for ANC services in the urban areas (38.3%) in the first trimester than their rural counterparts (19.9%); while more rural women (25.4%) booked in the 3rd trimester than their urban counterparts (9.1%).

This reflects better awareness about the importance of early care during pregnancy among urban mothers than in rural ones in Vietnam.

The possible explanation may be due to that the rural women lack awareness about the importance of early use of ANC. Another

potential reason might be that the proportion of women with more than two children is higher in the rural area than in the urban. Women who already have had more than two children might want to hide their pregnancy as long as possible, to avoid blame, as a consequence, they may not attend ANC or start ANC visit later than the others.

Our results show that there is a statistical significant difference between urban and rural women regarding number of ANC visits. Urban women had more visits than women in the rural areas **(Table 15)** and this comes in agreement with results from other studies in India, Bangladesh, Vietnam and Nigeria who Found that place of residence is an important contributing factor of inequalities in full ANC utilization ***(Gupta et al., 2017; Hajizadeh et al., 2014; Tran et al., 2011 and Dairo and Owoyokun, 2010).***

The possible explanation is that urban area differs both qualitatively and quantitatively from the rural area in many ways, not only in the characteristics of women and their household but also in the general context of the two settings. All these differences at both individual and district levels may contribute to the difference in ANC utilization.

Our results show that the most of studied women actually utilized the private clinics for ANC (89.8% of urban and 77.7% of rural women) for ANC in the latest completed pregnancy **(Table 15)**. This is consistent with **El-Zanaty and Ann, 2009**, who found that ANC was obtained two times or more from private provider

than a public sector provider (19.1 from public provider& 54.5% from private provider).

Roy et al, 2013 found that only (21.0%) of the study women utilized PHC as a source for ANC and **Metgud et al., 2009** in Karnataka, India found that only (9.68%) women went to PHC for ANC compared to (48.39%) pregnant women went to private clinics and such results reflect poor utilization and dissatisfaction regarding PHC services all over the world

These findings were inconsistent with a study conducted in Pakistan by **Majrooh et al., 2014** who found that rural women are mainly dependent on government's PHC health facilities for ANC services than private clinics.

One of the significant findings was the role of family members in motivating women to attend the ANC clinic and thereby improving the chances of availing complete ANC **(Table 16 and 17)**.

Unlike previous studies which focused on the motivation provided by husband in utilization of ANC care **(Phillippi, 2009 and Saha et al., 2007)**, our study considered the motivation for utilization of the ANC services by other family members and found that not only the husbands who can encourage the women to utilize the ANC but also their mothers and mothers in law play an important role.

This agrees with **Adhikari et al., 2016 and Hamed, 2014** who found that refusal of the husband was a considerable reason of not utilizing ANC in the latest completed pregnancy especially

among the rural women. According to **UN, 2012**, this can be due to the low levels of female education, and lack of empowerment that prevent women from seeking care and the autonomy to make decisions.

The most frequent factors in our results for not attending ANC at governmental health centers/units were the lack of enough care and services in the PHC and unavailability of specialists **(Tables 18)**, 95.3% of the studied urban women and 87.1% of the studied rural women didn't utilize PHC services due to lack of enough services meanwhile 25.3% of the studied urban women and 70.8% of the studied rural women didn't utilize PHC facilities due to absence of specialists. On the other hand long waiting time, lack of medicine and female physicians, long distance, difficult transportation and expensive treatment constituted the barriers for utilization of PHC facilities in ≤ 2.7% of the studied urban women and ≤ 19.1% of the studied rural women.

Other factor was mentioned in a study done in EL Fayom governorate in Egypt by **Hamed, 2014** who mentioned that there was lack of trust in the PHC doctors, many of the study women mentioned that they prefer private clinics because they trust their doctors because they are known to be competent. They also mentioned that they didn't know the providers in the PHC as each time they may encounter different physician. This may be due to high turnover of the physicians at the PHC facilities. Lack of trust would gamble the continuity of care especially with the poor filing system in the PHC.

Abou Zeina, 1998 and Abou Zeina et al., 2007 mentioned that rapport is a positive or close relationship between people that often involves mutual trust, understanding and attention and this is built over time. The high turnover rate usually known particularly for the physicians serving in PHC facilities in Egypt breaks this rapport to be established, and subsequently has its influence on PHC utilization and continuity of care.

Our results are consistent with what was reached by **Isatou et al., 2012** in a study conducted in Gambia that found that women attending public clinics received significantly lower levels of care than women attending private clinic.

A study conducted in Southeast Nigeria by **Emelumadu et al., 2014** revealed high level of utilization of maternal health services among pregnant women accessing ANC services in rural communities, preferred place for maternal health care services was hospital, most of which were private hospitals. High utilization of hospital for maternal services is probably because their services are more convenient, readily accessible and are more likely to be staffed with a doctor than the lower levels of healthcare and there was high level of satisfaction with the quality of maternal health care services received and they were most satisfied with the attitude of healthcare staff (85%), and least satisfied with the cost of services (79%).

Also in Tanzania, Kenya and Ghana there was greater preference for private health facilities to public health facilities and this was not due to difference in technical competence but primarily due to the process of service provision ***(Hutchinson et al., 2011)***.

Tran et al., 2011 found that preference of the study women to utilize the private clinics for ANC is due to their perception of private clinics as a very much superior if compared to PHC. The women mentioned a lot of factors which made them to perceive the private clinics as a better source for ANC and encourage them to utilize it. The lack of relevant and high quality antenatal care is still a major concern for many pregnant women in low and middle income countries.

Another study conducted in Bangladesh, 2011 revealed that the main reasons behind lack of ANC utilization in governmental services were distance to the service centers and transportation problems ***(Islam and Odland, 2011)***. Also, poor physical accessibility, irregular supplies, absence of adequate staff including lady doctors, lack of continuity from single care giver often forced the poor people to shift towards private health facilities in India ***(Pathak et al., 2010)***.

In contrast with a study done in public sector hospitals at Pakistan, the reasons identified for dissatisfaction among pregnant women in public sector hospitals at Pakistan were long waiting time, inadequate medicine supply and incomplete tetanus vaccination, distant location of health facilities, lack of functional equipment, medicine and supplies plus uncertainty in availability of the staff ***(Majrooh et al., 2015; Mauwane and Phaladi-Digamela, 2014 and Rashmi and Vijaykumar, 2010)***.

Among the users of primary health care facilities in our study, most of them whether urban or rural were satisfied with the accessibility and feasibility of the service while they were not satisfied with the waiting time for the doctors at the facilities **(Table 21)**. This come in consistent with a study done in El-Minia City by **Awadalla et al., 2009** who found that the most common causes of dissatisfaction that need to be modified both in urban and rural women were long waiting time and improper environment while the majority were satisfied with the economic feasibility and accessibility of the service.

This was inconsistent with study done in Nigeria by **Nnebue et al., 2014** who found that the waiting time is adequate based on the perception of respondents.

Another study done in Kaduna state showed that majority of the people in the study area were not within easy reach of a health care facility which reflects inaccessibility of the service but it is consistent with us as most of the respondents reported that antenatal patients have to wait for a long time before they are served by the health care personnel ***(Silas et al., 2015).***

Despite the perceived difficulties by some of the study women, nearly half of women in both urban and rural groups were generally satisfied about the provided service **(Table 22)**.

This is consistent with the results of **Isatou et al., 2012 and Jallow et al., 2012** who showed that the overall women attending either public or private facilities were satisfied with the ANC care they received (A high satisfaction level was evident among the women who utilized private facilities for ANC). However, these

finding should be interpreted with caution as research participants tend to respond favorably to questions about patient's perception. The literature systematically shows that pregnant women tend to be relatively uncritical, and to accept as appropriate whatever care they receive ***(Abou Zeina et al., 2007 and Langer et al., 2002)***.

Our results there showed that both women with high and low autonomy score had utilized ANC during their last pregnancy **(Table 23)**. This was inconsistent with many studies which found that the autonomy factor considered as underlying reasons behind ANC seeking behavior ***(Gupta et al., 2017; Jahan and Jahan, 2016 and Karmaker and Rabbi, 2015)***. This could reflect the significant role of the husbands in our study in motivating their wives for seeking ANC.

Finally, although this study included women from different ages, social classes, but its results may not necessarily be generalized to represent the entire women using ANC in Qaluybia governorate or other area in Egypt. It could serve as a pilot study for other researches planned in a way that will ensure representativeness regarding; a bigger sample size, as well, more data collection.

CONCLUSIONS

- Most of the study women utilized ANC in their latest completed pregnancy.
- Most of the study women showed positive perception towards ANC that is reflected on their ANC utilization pattern in their latest completed pregnancy.
- One of the alarming findings revealed in this study, was the limited utilization of PHC by the study women for ANC if compared with the private sector.
- Under utilization of PHC facilities for ANC is mainly due to lack of enough services and absence of specialists there.
- The other alarming finding revealed in this study, was the general satisfaction from the ANC service that was delivered to those who utilized PHC services, despite being of contents that did not match the basic required standards.

RECOMMENDATIONS

- More efforts are needed to promote the role of PHC in ANC provision through addressing the quality features wanted by the served women.
- Provision of the basic components needed for proper ANC at all PHC facilities as ultrasonography and recent laboratory equipments.
- Emphasis and supporting on skilled based education and training programme for physicians in PHC facilities.
- Enhancing the availability of female physicians at every PHC facility according to its catchment area and flow rate to shorten the waiting time for the Dr at the PHC facilities.
- Empowerment of medical informatics among PHC facilities in urban and rural areas to enhance the registration system (better to be computerized) to record and follow all the pregnant females and to find the dropouts and communicate easily with them by sending messages on their own or their husbands' mobiles.
- Enhancing the outreach programme for ANC by providing equipped mobile units at remote areas.
- Social marketing for ANC in PHC facilities for pregnant women through education, information and communication programmes.

SUMMARY

Poor utilization of maternal health care services has constrained Egypt (as one of the developing countries) from meeting targets of United Nations MDGs.

Antenatal care is the critical element for providing different services which are essential for maternal and child survival and reducing maternal mortality.

The ultimate aim of this study is to identify pattern of utilization of maternal health services at Benha district in order to promote it.

This study was a descriptive cross sectional comparative study. An interview questionnaire was used. Convenient samples of women who attended at the health centers (units) for obtaining any maternal health service or healthy child care services was taken (65 women attending Gamgra health unit and 335 for those attending MCH at Benha district).

It was found that most of the women in this study were at the peak of their fertility period, their age was ranged from from 19 to ≤ 39 years (94.6% of urban women and 77.3 %% of rural women) and their socioeconomic level was varied (21.5% were of low level, while 46% of middle level and 32.5% had a high level) and only 17% attended the primary health care services to obtain their ANC while 83% obtained it from private clinics.

About half of the women in this study admitted that they did not have health problems in their previous pregnancy (except the last pregnancy) .The most common last /present pregnancy health-related problem among the women in this study was anemia (in 41% of the studied women).

Most of the studied women used ANC in their last pregnancy (100% of urban women and 98.3% of rural women) and 82.6% of urban women and 86.6% rural women used ANC early in the first three months of pregnancy but the use of PHC services in obtaining ANC was very low compared with private clinics, with only 10.2% of urban women and 22.3% of rural women used primary health care units to receive ANC.

Women perception about ANC in this study about ANC was generally good. Almost all women in this study were well informed about the components of pregnancy care.

Results also highlighted the statistically significant factors that affect the pattern of ANC utilization among women in urban compared with rural women as the age of the women, employment and education of the women and their husbands, the number of pregnancy, family income and the source of gaining health services while the statistically insignificant factors were the number of live children , the type of deliveries , general health problems and existence of obstetric/ medical problems in the latest completed pregnancy .

The study concluded that utilization of PHC for ANC was limited due to many unsatisfactory factors at the PHC services mainly the lack of enough services and absence of specialists.

The study recommended that more efforts are needed to promote the role of PHC in ANC provision through provision of the basic components of ANC, availability and training of the health care personnel, improving the system needed to get the dropout pregnant females.

Figure 1: Focused antenatal care (ANC): The four-visit ANC model outlined in WHO clinical guidelines.

Goals			
1st visit (8-12 week)	**2nd visit(24-26 week)**	**3rd visit(30 week)**	**4th visit(36-38 week)**
Confirm pregnancy and EDD. Classify women for basic ANC (four visits) or more specialized care. Screen, treat and give preventive measures. Develop a birth and emergency plan. Advise and counsel.	Assess maternal and fetal wellbeing. Exclude pre eclapmsia and anemia. Give preventive measures. Review and modify birth and emergency plan. Advise and counsel.	Assess maternal and fetal wellbeing. Exclude pre eclapmsia ,anemia and multiple pregnancies Give preventive measures. Review and modify birth and emergency plan. Advise and counsel.	Assess maternal and fetal wellbeing. Exclude pre eclapmsia ,anemia ,multiple pregnancies and malpresentation.. Give preventive measures. Review and modify birth and emergency plan. Advise and counsel.
Activities			
1-History			
Take psychosocial, medical and obstetric history. Confirm pregnancy and calculate EDD. Classify all women (in some cases) after test results ,	Assess significant symptoms. Check records for previous complications and treatment during pregnancy. Re-classification if needed	Assess significant symptoms. Check records for previous complications and treatment during pregnancy. Re-classification if needed.	Assess significant symptoms. Check records for previous complications and treatment during pregnancy. Re-classification if needed

2-Examinations			
Complete general, and obstetrical examination, BP	Anaemia, BP, fetal growth, and movement.	Anaemia, BP, fetal growth, movement and multiple pregnancies.	Anaemia, BP, fetal growth, movement, multiple pregnancies and malpresentation.
3-Screening tests			
Haemoglobin, syphilis, HIV, proteinuria, blood/Rh group and bacteriuria	Bacteriuria	Bacteriuria	Bacteriuria
4- Treatments			
Syphilis ARV (antiretroviral drugs) if eligible Treat bacteriuria if indicated.	Antihelminthic ARV if eligible. Treat bacteriuria if indicated.	ARV if eligible. Treat bacteriuria if indicated.	ARV if eligible. Treat bacteriuria if indicated. If breech ECV (external cephalic version) or referal for ECV
5- Preventive measures			
Tetanus toxoid. Iron and folate.	Tetanus toxoid. Iron and folate. IPTp(preventive treatment for malaria during pregnancy). ARV	Iron and folate. IPTp ARV	Iron and folate. ARV

6- Health education, advise and counseling			
Self-care, alcohol and tobacco use. Nutrition. Safe sex, rest, sleeping under ITN (insecticide treated bednet). Birth and emergency plan.	birth and emergency plan. Reinforcement of previous advice.	Birth and emergency plan. Infant feeding. Postpartum /postnatal care. Pregnancy spacing. Reinforcement of previous advice.	Birth and emergency plan. Infant feeding. Postpartum/postnatal care, pregnancy spacing. Reinforcement of previous advice.

Figure 2: Summary list of WHO recommendations on antenatal care:

A. Nutritional Interventions	**Recommendation**	**Type of recommendation**
Dietary Interventions	A.1.1: Counseling about healthy eating and keeping physically active during pregnancy	Recommended
	A.1.2: In undernourished populations, nutrition education on increasing daily energy and protein intake is recommended.	Context-specific recommendation
	A.1.3: In undernourished populations, balanced energy and protein dietary supplementation is recommended.	Context-specific recommendation
	A.1.4: In undernourished populations, high-protein supplementation is not recommended for pregnant women to improve maternal and perinatal outcomes.	Not recommended
Iron and folic acid	A.2.1: Daily oral iron and folic acid supplementation with 30 mg to 60 mg of elemental iron and 400 µg (0.4 mg) of folic acid is recommended for pregnant women	Recommended

Supplements	A.2.2: Intermittent oral iron and folic acid supplementation with 120 mg of elemental iron and 2800 µg (2.8 mg) of folic acid once weekly is recommended for pregnant women if daily iron is not acceptable due to side-effects,	Context-specific Recommendation
Calcium supplements	A.3: In populations with low dietary calcium intake, daily calcium supplementation (1.5–2.0 g oral elemental calcium) is recommended for pregnant women to reduce the risk of pre-eclampsia.7	Context specific recommendation
Vitamin A supplements	A.4: Vitamin A supplementation is only recommended for pregnant women in areas where vitamin A deficiency is a severe public health problem.	Context-specific recommendation
Zinc supplements	A.5: Zinc supplementation for pregnant women is only recommended in the context of rigorous research.	Context-specific recommendation (research)
Multiple micronutrient supplements	A.6: Multiple micronutrient supplementations are not recommended for pregnant women to improve maternal and perinatal outcomes.	Not recommended
Vitamin B6 (pyridoxine) supplements	A.7: Vitamin B6 (pyridoxine) supplementation is not recommended for Pregnant women to improve maternal and perinatal outcomes.	Not recommended
Vitamin E and C supplements	A.8: Vitamin E and C supplementation is not recommended for Pregnant women.	Not recommended
Vitamin D supplements	A.9: Vitamin D supplementation is not recommended for pregnant women to improve maternal and perinatal outcomes.	Not recommended
Restricting caffeine intake	A.10: For pregnant women with high daily caffeine intake (more than 300 mg per day), lowering daily caffeine intake during pregnancy is recommended.	Context-specific recommendation

B. Maternal and fetal assessment	Recommendation	Type of recommendation
B.1: Maternal assessment		
Anaemia	B.1.1: Full blood count testing is the recommended method for diagnosing anaemia in pregnancy.	Context-specific recommendation
Asymptomatic Bacteriuria (ASB)	B.1.2: Midstream urine culture is the recommended method for diagnosing asymptomatic bacteriuria (ASB) in pregnancy.	Context-specific recommendation
Intimate partner violence (IPV)	B.1.3: Clinical enquiry about the possibility of intimate partner violence (IPV) should be strongly considered at antenatal care visits when assessing conditions that may be caused or complicated by IPV to improve clinical diagnosis and subsequent care,.	Context-specific recommendation
Gestational diabetes mellitus (GDM)	B.1.4: Hyperglycemia first detected at any time during pregnancy should be classified as either gestational diabetes mellitus (GDM) or diabetes mellitus in pregnancy.	Recommended
Tobacco use	B.1.5: Health-care providers should ask all pregnant women about their tobacco use (past and present) and exposure to second-hand smoke as early as possible in the pregnancy.	Recommended
Substance use	B.1.6: Health-care providers should ask all pregnant women about their use of alcohol and other substances (past and present) as early as possible in the pregnancy and at every antenatal care visit.	Recommended
Human immuno-deficiency virus (HIV) and syphilis	B.1.7: In high-prevalence settings, provider-initiated testing and counseling (PITC) for HIV should be considered a routine component of the package of care for pregnant women in all antenatal care settings.	Recommended

Tuberculosis (TB)	B.1.8: In settings where the tuberculosis (TB) prevalence is high, systematic screening for active TB should be considered for pregnant women as part of antenatal care.	Context-specific recommendation
B.2: Fetal assessment		
Daily fetal movement counting	B.2.1: Daily fetal movement counting, such as with "count-to-ten" kick charts, is only recommended in the context of rigorous research.	Context-specific recommendation (research)
Symphysis-fundal height (SFH) measurement	B.2.2: Replacing abdominal palpation with symphysis-fundal height (SFH) measurement for the assessment of fetal growth is not recommended to improve perinatal outcomes. A change from what is usually practiced (abdominal palpation or SFH measurement) in a particular setting is not recommended.	Context-specific recommendation
Antenatal Cardiotocography	B.2.3: Routine antenatal cardiotocography is not recommended for pregnant women to improve maternal and perinatal outcomes.	Not recommended
Ultrasound scan	B.2.4: One ultrasound scan before 24 weeks of gestation (early ultrasound) is recommended for pregnant women.	Recommended
Doppler US of fetal blood vessels	B.2.5: Routine Doppler ultrasound examination is not recommended for pregnant women	Not recommended
Antibiotics for asymptomaticbacteriuria (ASB)	C.1: A seven-day antibiotic regimen is recommended for all pregnant women with asymptomatic bacteriuria (ASB)	Recommended
Antibiotic prophylaxis to prevent recurrent UTI	C.2: Antibiotic prophylaxis is only recommended to prevent recurrent urinary tract infections in pregnant women in the context of rigorous research.	Context-specific recommendation (research)

Antenatal anti-D Ig administration	C.3: Antenatal prophylaxis with anti-D immunoglobulin in non-sensitized Rh-negative pregnant women at 28 and 34 weeks of gestation to prevent Rh D alloimmunization is only recommended in the context of rigorous research.	Context-specific recommendation (research)
Preventive anthelminthic treatment	C.4: In endemic areas, preventive anthelminthic treatment is recommended for pregnant women after the first trimester.	Context-specific Recommendation
Tetanus toxoid vaccination	C.5: Tetanus toxoid vaccination is recommended for all pregnant women.	Recommended
Malaria prevention: (IPTp)	C.6: In malaria-endemic areas in Africa, intermittent preventive treatment with sulfadoxine-pyrimethamine (IPTp-SP) is recommended for all pregnant women.	Context-specific Recommendation
Pre-exposure prophylaxis (PrEP) for HIV prevention)	C.7: Oral pre-exposure prophylaxis (PrEP) containing tenofovir disoproxilfumarate (TDF) should be offered as an additional prevention choice for pregnant women at substantial risk of HIV infection as part of combination prevention approaches.	Context-specific Recommendation
D. Interventions for common physiological symptoms	**Recommendation**	**Type of Recommendation**
Nausea and Vomiting	D.1: Ginger, chamomile, vitamin B6 and/or acupuncture are recommended for the relief of nausea in early pregnancy, based on a woman's preferences and available options.	Recommended
Heartburn	D.2: Advice on diet and lifestyle is recommended to prevent and relieve heartburn in pregnancy. Antacid preparations can be offered to women with troublesome symptoms that are not relieved by lifestyle modification.	Recommended
Leg cramps	D.3: Magnesium, calcium or non-pharmacological treatment	Recommended

	options can be used for the relief of leg cramps in pregnancy.	
Low back and pelvic pain	D.4: Regular exercise throughout pregnancy is recommended to prevent low back and pelvic pain, such as physiotherapy, support belts and acupuncture.	Recommended
Constipation	D.5: Wheat bran or other fiber supplements can be used to relieve constipation in pregnancy if the condition fails to respond to dietary modification.	Recommended
Varicose veins and Oedema	D.6: Non-pharmacological options, such as compression stockings, leg elevation and water immersion, can be used for the management of varicose veins and oedema in pregnancy	Recommended
E: Health systems interventions to improve utilization and quality ANC	**Recommendation**	**Type of Recommendation**
Woman-held case notes	E.1: It is recommended that each pregnant woman carries her own case notes during pregnancy.	Recommended
Midwife-led continuity of care	E.2: Midwife-led continuity-of-care models, in which a known midwife or small group of known midwives supports a woman throughout the antenatal, intrapartum and postnatal continuum, are recommended.	Context-specific Recommendation
Community-based interventions to improve and support communication	E.3: Group antenatal care provided by qualified health-care professionals may be offered as an alternative to individual antenatal care for pregnant women in the context of rigorous research, depending on a woman's preferences and provided that the infrastructure and resources are available,.	Context-specific recommendation (research)

	E.4.1: The implementation of community mobilization through facilitated participatory learning and action (PLA) cycles with women's groups is recommended to improve maternal and newborn health, particularly in rural settings with low access to health services.	Context-specific recommendation
	E.4.2: Packages of interventions that include household and community mobilization and antenatal home visits are recommended to improve antenatal care utilization and perinatal health outcomes, particularly in rural settings with low access to health services.	Context-specific recommendation
Task shifting compon ents of antenatal care delivery	E.5.1: Task shifting the promotion of health-related behaviours for maternal and newborn health to a broad range of cadres, including lay health workers, auxiliary nurses, nurses, midwives and doctors is recommended. E.5.2: Task shifting the distribution of recommended nutritional supplements and intermittent preventive treatment in pregnancy (IPTp) for malaria prevention to a broad range of cadres, including auxiliary nurses, nurses, midwives and doctors is recommended.	Recommended Recommended
Recruitment and retention of staff in rural and remote areas	E.6: Policy-makers should consider educational, regulatory, financial, and personal and professional support interventions to recruit and retain qualified health workers in rural and remote areas.	Context-specific recommendation
Antenatal care contact schedules	E.7: Antenatal care models with a minimum of eight contacts are recommended to reduce perinatal mortality and improve women's experience of care.	Recommended

Figure 3: perceived barriers to ANC:

Barrier	Main findings
a. Access and resource availability	
1. Transportation/access	
1.1 Proximity of health facility	Long distance to heath facilities aggravated by sparsely distributed population settlements.
1.2 Transport means availability	Lack of commercial or private means of transportation.
1.3 poor roads	The mud during the wet season, , parts of roads being washed away, inaccessibility of health facilities for delivery of drugs and supplies, bumpy roads which predisposed women to excessive shaking if travelling by car or motorbike.
2. Costs	Though all the MCH care services are theoretically free of cost but indirect and informal payments such as travel cost to and from the government facility, leaving work to seek care, and paying for prescribed medicines (as most of women reported that government facility were short of medical supplies) were reported as considerable barriers to accessing care and treatment.
b. Influence of socio-cultural context	
1. Domestic chores of women	Lack of time to attend ANC due to the heavy burden of domestic work. Lack of someone to leave behind with children if a woman decides to visit a heath facility. Inability to arrive at the health facility on time due to domestic chores.
2. Influence of husbands/male partners	Men unwilling to pay for costs associated with visiting a health facility, men restricting their partners from attending ANC, lack of emotional support and encouragement from men, lack of interest in maternal health by men. Men perceive ANC attendance to be unnecessary because foremothers never used to attend ANC.
3. Insecurity	Women cannot leave children at home alone to attend ANC because of the insecurity. Husbands cannot allow their wives to attend ANC because of insecurity.

c. Perceptions of pregnancy	
1. Perceived benefit	ANC perceived to be a new concept in the community, unfamiliarity with ANC and its significance, lack of prior contact with the formal heath system.
2. Perceived risk	Low-risk perception due to no prior pregnancy-related complications and trivialization of health problems during pregnancy. ANC attendance not viewed as a routine exercise but linked to pregnancy complications.
d. Perceived quality of care and efficacy of medical treatment	Dissatisfaction with ANC if medical treatment was not provided during the visit. Attendance of ANC influenced by whether the woman's symptoms were relieved by treatment received during previous ANC visit. Dissatisfaction with the quality of care given from health care providers including absence of specialist doctors.

Figure 4: Maternal care indicators by selected demographic and social characteristics.

Back ground characteristic	**Percentage of mothers who had prior to the last live birth:**			**Percentage of mothers whose last live birth was protected against tatanus**	**Percentage of births in the 5 year period before the survey delivered**		
	Any antenatal care	**Regular antenatal care**	**At least one tetanus toxoid injection**		**By skilled provider**	**By health facility**	**By ceserian section**
Mother's age at birth:							
<20	93.3	87.1	85.8	80.0	90.7	84.7	45.7
20-34	90.8	83.3	77.0	75.3	91.7	87.2	52.4
35-49	84.7	76.6	60.0	63.5	90.8	84.4	52.7

Birth order:							
1	96.5	93.0	85.7	76.9	95.8	92.3	59.5
2-3	90.9	83.0	76.8	75.1	91.7	87.2	52.2
4-5	84.8	75.0	66.8	72.2	86.0	78.3	39.6
6+	74.4	60.7	49.9	60.7	76.8	68.4	32.7
Urban-rural residence:							
Urban	92.8	87.8	67.8	67.9	96.5	93.7	60.1
Rural	89.2	80.5	79.6	77.4	89.3	83.5	48.1
Place of residence:							
Urban Governorates	94.1	90.9	65.5	63.8	97.4	95.0	62.0
Lower Egypt	93.7	87.1	78.5	75.1	95.1	91.0	60.3
Urban	95.4	90.1	69.1	66.8	98.1	96.4	70.6
Rural	93.3	86.3	80.8	77.1	94.4	89.7	57.8
Upper Egypt	85.3	75.6	75.7	76.6	86.1	79.8	39.7
Urban	89.3	82.9	69.2	72.9	94.4	90.5	50.2
Rural	83.8	72.8	78.2	78.0	83.1	75.9	35.9
Frontier Governorates4	86.9	78.7	60.8	64.6	89.2	84.1	41.1
Education:							
No education	80.1	68.8	75.8	75.1	79.2	71.1	37.0
Some primary	82.9	75.3	68.5	71.2	86.8	81.9	43.5
Primary comp./some sec.	89.3	80.5	75.0	74.1	91.1	85.6	46.4
Secondary complete/higher	94.3	88.4	76.7	74.5	95.8	92.1	58.5
Work status:							
Working for cash	94.4	88.0	73.0	72.3	94.6	90.7	55.9

Not working for cash	89.8	82.2	76.2	74.6	91.2	86.2	51.3
Total	90.3	82.8	75.8	74.4	91.5	86.7	51.8

Percentage of mothers who prior to the last live birth in the five-year period before the survey received any and regular antenatal care from a trained medical provider and at least one tetanus toxoid injection during the pregnancy, percentage of mothers whose last live birth in the five-year period before the survey was protected from neonatal tetanus, and percentage of births in the five-year period prior to the survey who were delivered by a skilled provider, who were born in a health facility, and who were delivered by caesarean section, Egypt 2014.

Figure 5: Maternal care indicators by governorate:

Governorate	**Percentage of mothers who had regular antenatal care prior to last birth**	**Percentage of mothers whose last live birth was protected against neonatal teanusl**	**Percentage of births in the five-year period before the survey delivered by:**	
			Skilled provider	**Caesarian section**
Urban Governorates				
Cairo	89.9	64.4	97.8	58.6
Alexandria	92.7	62.0	96.0	68.0
Port Said	96.8	77.5	99.6	76.6
Suez	89.0	30.9	99.3	59.0
Lower Egypt				
Damietta	94.6	57.8	98.9	76.0
Dakahlia	93.1	69.2	98.9	65.5
Sharkia	83.5	68.9	92.2	53.1
Kalyubia	80.1	64.0	94.2	57.0

Kafr El-Sheikh	91.0	89.4	98.5	70.4
Gharbia	83.3	67.1	95.7	65.0
Menoufia	89.0	93.9	95.1	59.1
Behera	88.0	83.7	92.8	56.0
Ismailia	85.3	79.9	95.7	50.4
Upper Egypt				
Giza	79.6	71.0	93.1	43.1
Beni Suef	74.8	85.9	80.7	44.3
Fayoum	75.6	88.4	84.5	38.9
Menya	70.2	76.1	73.5	41.8
Assuit	76.7	76.0	82.4	34.8
Souhag	70.3	69.3	87.3	35.6
Qena	73.2	79.2	90.6	39.7
Aswan	85.7	71.4	98.1	39.7
Luxor	83.7	86.6	97.9	40.2
Frontier Governorates				
Red Sea	86.0	67.1	94.0	50.9
New Valley	90.2	96.9	98.3	47.7
Matroh	59.9	35.9	78.0	26.2
Total	82.8	74.4	91.5	51.8

A woman is considered to have had regular antenatal care if she had four or more visits during the pregnancy. Includes mothers with two injections during the pregnancy of her last live birth, or two or more injections (the last within three years of the last live birth), or three or more injections (the last within five years of the last live birth), or four or more injections (the last within 10 years of the last live birth), or five or more injections at any time prior to the last live birth. Skilled provider includes doctor or nurse/midwife.

Figure 6: Trends in maternal health indicators by residence:

Maternal health indicator	Lower Egypt			Upper Egypt			Frontier governorates
	total	urban	rural	total	urban	rural	
Any antenatal care							
1988	49.1	65.8	43.1	54.7	67.8	48.6	na
1992	53.2	69.2	47.5	50.6	65.5	45.4	na
1995	44.8	67.3	36.9	31.5	54.2	22.8	Na
2000	55.2	70.9	49.2	48.0	68.2	39.9	36.4
2005	78.4	89.3	74.9	59.7	77.4	52.4	65.6
2008	74.7	81.7	72.6	66.9	81.7	61.0	72.9
2014	93.7	95.4	93.3	85.3	89.3	83.8	86.9
Regular antenatal care							
1988	na	na	na	na	na	na	Na
1992	20.1	37.8	13.7	16.1	33.3	10.2	Na
1995	29.7	53.2	21.5	19.2	41.1	10.8	29.5
2000	40.7	56.0	34.9	29.8	51.7	21.1	23.7
2005	66.9	81.3	62.2	47.8	68.3	39.3	54.6
2008	67.2	78.5	63.9	57.5	75.6	50.3	66.0
2014	87.1	90.1	86.3	75.6	82.9	72.8	78.7
Tetanus toxoid injections							
1988	15.2	15.3	15.1	13.4	18.9	10.9	Na
1992	68.4	72.3	67.0	58.1	61.1	57.1	Na
1995	48.3	52.4	46.9	41.0	39.2	41.6	Na
2000	75.0	69.4	77.0	65.9	65.1	66.2	59.1

2005	46.3	36.5	49.7	40.8	37.8	41.9	27.9
2008	78.1	73.2	80.0	70.3	74.7	68.5	65.0
2014	78.5	69.1	80.8	75.7	69.2	78.2	60.8
Medically-assisted deliveries							
1988	31.1	54.4	23.3	23.9	46.9	14.4	Na
1992	39.7	62.9	32.5	29.7	51.8	23.0	Na
1995	51.4	75.1	43.9	32.2	59.6	22.9	59.3
2000	65.1	84.7	58.1	47.8	74.7	38.2	60.4
2005	81.6	92.9	78.0	62.6	83.8	54.8	71.8
2008	85.3	92.0	83.4	66.4	85.6	59.2	79.1
2014	95.1	97.8	94.4	86.1	94.4	83.1	89.2
Caesarean deliveries							
1988	na	na	na	na	na	na	Na
1992	na	na	na	na	na	na	Na
1995	7.3	11.3	6.1	3.8	7.9	2.4	3.4
2000	11.2	17.7	8.9	6.1	12.6	3.8	5.3
2005	24.5	34.9	21.2	11.8	20.4	8.6	14.3
2008	30.9	43.2	27.4	19.9	30.9	15.8	20.0
2014	60.3	70.6	57.8	39.7	50.2	35.9	41.12

استبيان عن نمط استخدام خدمات الرعايه الصحيه للأمهات

الرقم المسلسل / ..... **التاريخ / .....**

جميع بيانات هذه الاستماره سريه و ليست للتدوال على المستوى الشخصى و لن تستخدم الا فى أغراض البحث العلمى تملأ الاستماره بالحوار مع الأم

أ- بيانات شخصيه و اجتماعيه:-

1-الاسم

2-السن

3-التعليم: (1) أمى (2) يقرأ و يكتب (3)ابتدائي (4) اعدادي (5) ثانوى (عام-فنى(3-5) سنين (6) متوسط(معهد سنتين) (7) جامعه (8) دراسات عليا

الزوج: الزوجه:

4-العمل الحالى: (1)لايعمل(ربه منزل) (2)عامل يدوى(غير حرفي) (3)عامل حرفى-فلاح (4)تجاره و اعمال(صفقات) (5) موظف مكتبى (6) متخصص

الزوج: الزوجه:

5-انتي ساكنه فين: (1) الحضر (2) الريف

6- عدد افراد الاسره (الوالدين و الابناء و كل المعالين): (1) اقل من 5 (2) 5 فأكثر

7-عداد افراد الاسره الكسيبه (العائله): (1) واحد (2) اتنين (3) تلاته

8-مستوى تعليم الابناء اكتر من 5 سنين (خاص او حكومى):

(1) كل الاطفال بيروحو (او راحو) المدرسه او الجامعه.

(2) اقل من 50% بيروحو (او راحو) المدرسه او الجامعه.

(3) 50% او اكتر بيروحو (او راحو) المدرسه او الجامعه.

(4) محدش خالص بيروح (او راح) المدرسه او الجامعه.

9-انتو عندكو في البيت (اختيارات متعدده): - تلاجه ( ) - راديو ( ) - تليفزيون ( ) - غساله ( ) - تليفون او موبيل ( ) -عربيه ( ) - ارض زراعيه ( ) - ارض غير زراعيه للسكن ( ) -محل او مزرعه حيوانات ( ) - بيت تانى (غير بيت العيله) ( ) - حيوانات و طيور( ) - كمبيوتر و انترنت ( )

10-البيت بتاعكو فيه (اختيارات متعدده): - مياه نقيه(صالحه للشرب) ( ) - كهربا ( ) - غاز طبيعى ( ) - صرف صحى ( ) - البلديه بتيجى تلم القمامه ( ) - مرحاض (تواليت) ( ) - تكييف ( )

11-البيت بتاعكو: (1) ملك و اربع غرف او اكتر (2) ملك و اقل من 4 غرف (3) ايجار و اربع غرف او اكتر (4) ايجار و اقل من 4 غرف (5) مفيش بيت نسكن فيه

12-عدد افراد البيت مقسوم على عدد الغرف (مؤشر الازدحام) : (1) اقل من او يساوى واحد لكل غرفه (2) اكتر من واحد للغرفه

13-الدخل بتاع العيله (من كل المصادر) : (1) بنتداين عليه (2) يدوب بيكفي المصاريف العاديه (3) بيكفي المصاريف العاديه و الطوارىء (4) بنقدر نحوش و نستثمر بيه

14-المصدر الاساسي للرعايه الصحيه: (1) المرافق الصحيه الخاصه (2) التأمين الصحى (3) الخدمات الحكوميه المجانيه (4) اكتر من اختيار (5) بعالج نفسى بالعلاج التقليدى

15- مصدر المعلومات الصحيه ليكي (اختيارات متعدده) :

(1) - المطبوعات (كتب- بوسترات- كتيبات.....) 1- نعم 2- لا

(2) - الرسائل الصوتيه و المرئيه فى التليفزيون و الراديو 1- نعم 2- لا

ب- بيانات متعلقه بالحاله الصحيه و التاريخ الانجابى للأم:-

16-حملتى كام مره قبل كده

(1) مرة واحده (2) مرتين (3) ثلاث مرات (4) أربعه أو أكثر

17-عدد الأبناء الأحياء:

(1) طفل واحد (2) اثنين (3) ثلاث (4) أربعه أو أكثر

18-انتى ولدتى ازاى اخر مره :

(1) طبيعى (2) قيصرى

19-هل عندك اى مشاكل صحيه (اختيارات متعدده):

(1) سكر (2) ضغط (3) أمراض قلب (4) امراض كلى (5) أمراض كبد (6) صرع (7) لا توجد (8) اخرى نذكر

20-هل كان عندك مشاكل فى مرات الحمل السابقه على أخر حمل (اختيارات متعدده):

(1) اجهاض	1- نعم	2- لا
(2) ولاده جنين ميت	1- نعم	2- لا
(3) جنين ناقص الوزن	1- نعم	2- لا
(4) موت الطفل اول اسبوع	1- نعم	2- لا
(5) سكر ناتج عن الحمل	1- نعم	2- لا
(6) ضغط ناتج عن الحمل	1- نعم	2- لا
(7) لاتوجد	1- نعم	2- لا
(8) أخرى	1- نعم	2- لا

21- هل كان عندك اى مشاكل فى الحمل الاخير ده:

(1) نزيف اول 3 شهور	1- نعم	2- لا
(2) نزيف قبل الولاده	1- نعم	2- لا
(3) افرازات كتيره و حرقان في البول	1- نعم	2- لا
(4) أنيميا	1- نعم	2- لا
(5) سكر ناتج عن الحمل	1- نعم	2- لا
(6) ضغط ناتج عن الحمل	1- نعم	2- لا
(7) قله حركه الجنين	1- نعم	2- لا
(8) وضع الجنين غير طبيعى	1- نعم	2- لا
(9) لا توجد	1- نعم	2- لا
(10) أخرى تذكر	1- نعم	2- لا

ج-التوجه العام للسيدات عن خدمات متابعه الحمل:-

22- تفتكرى ان متابعه الحمل دى مهمه:

(1) نعم (2) لا

23- (اذا كانت الاجابه بنعم في السؤال السابق) لمين بالذات المتابعه مهمه :

(1) كل ست حامل حتى لو كويسه (2) البكريه (3) الست اللى عندها مشاكل فى الحمل (4) الست اللى ولدت قيصرى قبل كده (5)الست اللى سقطت قبل كده (6) لا أعلم (7) أخرى تذكر

24-انتى شايفه ان الست الحامل لما تروح تتابع الحمل دى حاجه مفيده لها و للعيل اللى فى بطنها:

(1) مش مفيده جدا (2) مش مفيده (3) مفيده (4) مفيده جدا

25-تفتكرى أنسب وقت للست الحامل عشان تبدأ متابعه:

(1) مجرد ما تعرف انها حامل (2) فى أول 3 شهور (3) قبل ما تولد (4) لا اعلم (5) أخرى تذكر

26- انتي شايفه ان الست الحامل لازم تروح المتابعه كام مره:

(1) 4 او 5 مرات (2) مره كل شهر (3) زي الدكتور ما يقول (4) لا اعلم (5) أخرى تذكر

27-انتي شايفه المتابعه أحسن فى:
(1) الوحده الصحيه (2) الدكتور الخاص (3) لا داعى للمتابعه (4) اخرى تذكر
28-انتى تعرفى ان الست اللى بتابع الحامل لازم يتعملها (اختيارات متعدده)
(1) قياس الضغظ (1) نعم (2) لا
(2) قياس الوزن (1) نعم (2) لا
(3) تحليل دم و بول (1) نعم (2) لا
(4) تاخد حديد (1) نعم (2) لا
(5) تاخد كالسيوم (1) نعم (2) لا
(6) تاخد حقن التيتانوس (1) نعم (2) لا
(7) تعمل سونار(موجات صوتيه) (1) نعم (2) لا
29-هل تنصحى اى ست حامل تعرفيها انها تتابع الحمل بتاعها:
(1) نعم (2) لا (3) أخرى تذكر
30-لو حملتى تانى:
(1) هل ستتابعى حتى لو حملك طبيعى
(2) هل ستتابعى لو بس فى مشاكل في الحمل
(3) مش هتابعى عشان خدتى خبره من الحمل ده
(4) مش هتابعى عشان قاباتني صعوبه فى المتابعه
(5) أخرى تذكر

د-الاسئله التى تحدد نمط الاستخدام:-
31-هل استخدمتى خدمات متابعه الحمل فى المرات السابقه:
(1) نعم (2) لا (3) لا ينطبق
اذا كانت الاجابه ب لا:اذهب للسؤال 43
32-هل استخدمتى خدمات متابعه الحمل فى أخر حمل لكى:
(1) نعم (2) لا
33- بدأتى تروحى المتابعه امتى (فى اخر حمل
(1) اول 3 شهور (2) الرابع الى الشهر السادس (3) السابع الى التاسع
34-عدد مرات المتابعه اللى روحتيها طوال اخر حمل
(1) أقل من 4 (2) أربع مرات (3) خمس مرات (4) أكتر من خمسه
35- كنتى بتابعي فين (فى اخر حمل)
(1) وحده(مركز) صحيه (2) عياده خاصه (3) عياده فى مستشفى حكومى (4) أخرى تذكر
36-لو الاجابه (2) أو (3) ليه تابعتى هناك:
(1) خدمات الوحدات غير كافيه (1) نعم (2) لا
(2) بنتظر كتير (1) نعم (2) لا
(3) الدكاتره مش موجوده (1) نعم (2) لا
(4) الادويه مش موجوده (1) نعم (2) لا
(5) المسافه بعيده (1) نعم (2) لا
(6)الموصلات صعبه (1) نعم (2) لا
(7) العلاج مكلف (1) نعم (2) لا
(8) الدكتور راجل فى الوحده (1) نعم (2) لا
(9) أخرى تذكر (1) نعم (2) لا
37- لو الاجابه (1) بتاخدى اد ايه عشان توصلى لاقرب وحده(المركز) الصحى لكى:
(1) أقل من 30 دقيقه (2) من 30 دقيقه لساعه (3) من ساعه ل ساعه و نص (4) من ساعه و نص لساعتين (5) اكتر من ساعتين

38-ازاى بتوصلى هناك:

(1) مشى (2) عجله بخاريه (3) توكتوك (4) موصلات عامه (5) عربيه خاصه

39-بتقعدى حوالى قد ايه مستنيه الدكتور يكشف عليكى: (1) اقل من 30 دقيقه (2) من 30 دقيقه لساعه (3) من ساعه لساعه و نص (4) من ساعه و نص لساعتين (5) اكتر من ساعتين

40--كنتى بتجدي صعوبه فى الحصول على المتابعه:

(1) نعم صعوبه فى الوصول: -بسبب بعد المسافه ( ) -بسبب الموصلات ( ) -بسبب سوء الطريق ( ) 1- نعم 2- لا

(2) نعم بسبب طول وقت الانتظار 1- نعم 2- لا

(3) نعم لان المتابعه مكلفه 1- نعم 2- لا

(4) لا لم اجد اى صعوبه 1- نعم 2- لا

(5) أخرى تذكر 1- نعم 2- لا

41-هل انتى راضيه عن الخدمات اللى اتقدمت لك فى متابعه الحمل الاخير:

(1) مش راضيه جدا (2) مش راضيه (3) راضيه (4) راضيه جدا

42-مين اللى عرفك ان متابعه الحمل مهمه:

(1) والدتك (1) نعم (2) لا

(2) أصدقائك (1) نعم (2) لا

(3) وسائل الاعلام (1) نعم (2) لا

(4) أخرى تذكر (1) نعم

43-مين كان بيشجعك تروحى المتابعه:

(1) زوجك (1) نعم (2) لا

(2) والدتك (1) نعم (2) لا

(3) حماتك (1) نعم (2) لا

(4) ولا أحد (1) نعم (2) لا

(5) أخرى تذكر (1) نعم (2) لا

<u>فى حاله الاجابه ب لا على السؤال رقم 30</u>

44-ليه مروحتيش المتابعه فى الحمل الاخير:

(1) لأن الحمل كان طبيعى و محستش بأي مشاكل

(2) لأنى عارفه كل حاجه عن الحمل لأنى حملت قبل كده

(3)لأن المتابعه مكلفه مقدرش على تمنها

(4) لأنه صعب الوصول لمكان المتابعه(بسبب بعد المسافه- صعوبه الموصلات-سوء الطريق)

(5) لأن جوزى مكنش موافق

(6) أخرى تذكر

<u>ه-اسئله التى تقيم الحكم الذاتى للمرأه:</u>

45-تعرفى تصرفى فلوس من غير متستاذنى حد فى البيت:

(1) نعم (2) لا (3) أحيانا

46-بتخدي بعض القرارات بتاعه البيت لوحدك:

(1) نعم (2) لا (3) أحيانا

47-لازم استأذن من جوزى / كبار البيت قبل مخرج:

(1) نعم (2) لا (3) أحيانا

48-لازم حد من عيلتى يجى معايا المستشفى:

(1) نعم (2) لا (3) أحيانا

49-انا اقدر اشوف اهلى وقت محب:

(1) نعم (2) لا (3) أحيانا

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الملخص العربي

لقد أدى سوء استخدام خدمات الرعايه الصحيه للأمهات إلى تقييد مصر (كواحدة من البلدان النامية) لتحقيق مهمة أهداف الألفية الإنمائية للأمم المتحدة.

إن رعايه ما قبل الولادة هي العنصر الحاسم في توفير الخدمات المختلفة الضرورية لسلامة الأم والطفل والحد من وفيات الأمهات.

تهدف هذه الدراسة الى تعزيز استخدام رعاية الحمل للسيدات فى مركز بنها بمحافظة القليوبيه وذلك من خلال تحديد نمط استخدام السيدات لتلك الخدمات فى ذلك المركز.

و قد كانت هذه الدراسه دراسة مقطعيه وصفيه وذلك بتحليل عينة مقطعيه لمجموعة مناسبة من السيدات اللاتي ترددن علي المراكز الصحية للحصول على أي من خدمات الرعايه الصحيه لالأمهات أو للأطفال و تتمثل العينه في 65 امرأة من وحدة جمجره الريفية و 335 امرأة من مركز رعاية الأمومة والطفولة في مركز بنها.

و قد تبين أن معظم السيدات فى هذه الدراسة كن فى ذروة فترة الخصوبة, حيث تراوحت أعمارهن بين 19 الي اقل من او 39 عاما (94.6% من سيدات الحضر و 77.3% من سيدات الريف) . و قد تباين سيدات تلك الدراسه في المستوى الاجتماعى فقد كان 21.5% منهن ذى مستوي منخفض بينما كان 46% ذى مستوى متوسط بينما كان 32.5% منهن ذى مستوي مرتفع. وقد كان معدل تردد الأمهات على خدمات متابعه الحمل يتراوح بين كان 17% من خلال خدمات الرعايه الصحيه الاوليه و 83% من خلال العيادات الخاصه .

و قد اقر حوالي نصف السيدات فى هذه الدراسة أنه لم يكن لديهن مشاكل صحيه فى اخر حمل لهن و قد كانت الانيميا المشكلة الصحيه الأكثر شيوعا بين سيدات هذه الدراسة .

وقد توصلت الدراسه الي أن أغلب المشاركات في تلك الدراسه قد استخدمن خدمات رعاية الحمل فى اخر حمل لهن (100% من سيدات الحضر و98.3% من سيدات الريف) وقد بدأ 82.6% من سيدات الحضر و 86.6% من سيدات الريف في هذه الدراسة استخدام رعاية الحمل باكرا فى أول ثلاثة شهور من الحمل بينما كان دور

الرعايــة الصــحيه الأوليــه فــى تقــديم خــدمات رعايــة الحمــل منخفضــا جــدا بالمقارنــة مــع العيــادات الخاصــة, حيــث أن 10.2% فقــط مــن ســيدات الحضــر و 22.3% مــن ســيدات الريف استخدمن وحدات الرعاية الصحيه الأوليه فى الحصول على رعاية الحمل.

و تبــين أن التوجــه العــام للســيدات فــى هــذه الدراســة عــن رعايــة الحمــل كــان جيــدا بصــفة عامــة و قــد كــان جميــع ســيدات هــذه الدراســة تقريبــا ذى معرفــه عاليــه عــن مكونــات رعاية الحمل.

وأبــرزت النتــائج أيضــا العوامــل ذات الدلالــة الإحصــائية التــي تــؤثر علــى نمــط اســتخدام خــدمات رعايــه الحمــل بــين النســاء فــي المنــاطق الحضــرية مقارنــة مــع النســاء الريفيــات مثــل ســن المــرأة ، وتوظيــف وتعلــيم النســاء وأزواجهــن ، وعــدد مــرات الحمــل ، ودخــل الأســرة ومصــدر الحصــول علــى الخــدمات الصــحية فــي حــين كانــت العوامــل غيــر ذات دلالــة إحصــائية هــي عــدد الأطفــال الأحيــاء ، ونــوع الــولادات ، والمشــاكل الصــحية العامة ووجود مشاكل توليد / صحيه في آخر الحمل المكتمل.

و قــد خلصــت هــذه الدراســة الــى أن اســتخدام الرعايــة الصــحية الأوليــة لمتابعــه الحمــل كــان محــدودا بســبب العديــد مــن العوامــل غيــر المرضــية فــي خــدمات الرعايــة الصــحية الأوليــة وكــان مــن أهمهــم عــدم وجــود خــدمات كافيــة وغيــاب المتخصصــين فــي المراكــز قبــل الدراسه .

هــذا و قــد أوصــت هــذه الدراســة بضــرورة بــذل المزيــد مــن الجهــود لتعزيــز دور الرعايــة الصــحية الأوليــة فــي تــوفير رعايــة مــا قبــل للــولادة للحوامــل مــن خــلال تــوفير المكونــات الأساســية لهــا ، وتــوافر وتــدريب العــاملين فــي مجــال الرعايــة الصــحية و الحــد مــن تسرب السيدات المترددات علي خدمه متابعه الحمل.

نمط استخدام خدمات الرعايه الصحيه للأمهات في مركز بنـها, محافظه القليوبيه

رسالة مقدمة من

مى مجدي أنور صابر

معيد بقسم الصحه العامه و طب المجتمع

توطئة للحصول على درجة الماجيستير في الصحة العامة والطب الوقائي والاجتماعي

تحت إشراف

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كلية الطب

جامعة بنـها

2018