FACTORS INFLUENCING UTILIZATION OF ANTENATAL CARE SERVICES AMONG WOMEN OF REPRODUCTIVE AGE IN KAJO-KEJI COUNTY CENTRAL EQUATORIA STATE REPUBLIC OF SOUTH SUDAN; A QUALITATIVE STUDY

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REPUBLIC OF SOUTH SUDAN

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A thesis submitted in partial fulfillment of the requirements for the award of Master of Public Health degree

By

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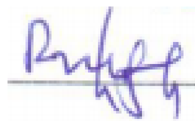
Republic of South Sudan

DECLARATION:

The Thesis Titled; *"FACTORS INFLUENCING UTILIZATION OF ANTENATAL CARE SERVICES AMONG WOMEN OF REPRODUCTIVE AGE (15-49 YEARS OLD) IN KAJO-KEJI COUNTY CENTRAL EQUATORIA STATE REPUBLIC OF SOUTH SUDAN; A QUALITATIVE STUDY"* is my own work. Where other people's work has been cited, this has been carefully acknowledged and referenced in accordance with institutional requirements.



Signature

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DEDICATIONS:

This Thesis is dedicated to my family, in particular; my parents Mr. LOBOKA Erenao Doga and Mrs. PITA Mary Loboka who ensured I went to school, my brothers and sisters LONSUK Edward Loboka, KENYI Emanuel Loboka, PITA Gloria Loboka, PITA Rose Loboka and KOITI Betty Loboka for their support and encouragement during my study period not forgetting my dear wife OCOKORU Judith who for one complete year had to bear the stress of loneliness.

Most importantly, I dedicate this thesis to the ALMIGHTY GOD, my protector and giver of life for keeping me safe and healthy in a strange environment with unfamiliar weather condition.

LIST OF ABBREVIATIONS:

AIDS:	Acquired Immune deficient syndromes
ANC:	Antenatal Care
BCC:	Behaviours change communication
CHW:	Community Health Worker
FGD:	Focus Group Discussion
GDP:	Gross Domestic Product
GOSS:	Government of South Sudan
HIV:	Human Immune deficient Virus
IDI:	In-depth interviews
IPT:	Intermittent Preventive Treatment
ITNS:	Insecticide Treated Net
KII:	Key Informant Interview
KIT:	Royal Tropical Institute
MCH:	Maternal and child Health
MoH-DR:	Ministry of Health Directorate of Research
NBS:	National Bureau of Statistics
PHCC:	Primary Health Care
PHCU:	Primary Health Care Unit
PI:	Principal Investigator
PMNC:	Partnership for maternal and Child Health
PMTCT:	Prevention of mother to Child Transmission
PNC:	Postnatal Care
RA:	Research Assistant
ROSS:	Republic of South Sudan
SHARP:	South Sudan Health Action and Research Project
SMoH:	State ministry of Health
SSNBS:	South Sudan National Bureau of Statistics
THE:	Total Health Expenditure
TT:	Tetanus Toxoid
UNICEF:	United Nations International Children Education Fund
VU:	Vrije Universiteit
WHO:	World Health Origination

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DEFINITION OF CONCEPTS:

Antenatal care (ANC): Is the clinical assessment of mother and fetus during pregnancy, for the purpose of obtaining the best possible outcome for the mother and child

Antenatal care (ANC): Is the routine health control of presumably healthy pregnant women without Symptoms (screening), in order to diagnose diseases any complicating obstetric conditions without symptoms, and to provide information about lifestyle, pregnancy and delivery ***Or:***

Antenatal care (ANC) constitutes *''screening pregnant women for health and socioeconomic conditions likely to increase the possibility of specific adverse pregnancy outcomes; providing therapeutic interventions known to be effective; and educating pregnant women about planning for safe birth and emergencies during pregnancy and how to deal with them''*(1)

Antenatal care coverage (at least four visits): Is the percentage of women aged 15–49 with a live birth in a given time period that received antenatal care by any provider four or more times during their pregnancy

Antenatal care coverage (at least one visit): Is the percentage of women aged 15–49 with a live birth in a given time period that received antenatal care provided by skilled health personnel at least once during their pregnancy.

Behavioral change communication sessions: Refer to out of health center meetings that aim at advising women by mid-wife or any trained health profession on antenatal care (ANC) and postnatal care utilization (PNC)

Conceptual /Analytical framework: According to the Mosby's Medical Dictionary, *"a conceptual frame work is a group of concepts or ideas that are broadly defined and systematically organized to provide a focus, or rationale, and or a tool for the integration and interpretation of information".* It is usually expressed abstractly through word models. A conceptual framework is the basis for many theories.

Factors associated with accessibility: Access to health care means *"having the timely use of personal health services to achieve the best health outcomes*". Attaining good access to care requires three discrete steps;

- Finding the providers who meet the needs of the individual patients and with whom patients can develop mutual relationship based on mutual communication and trust.
- Gaining entry into the health system,
- Getting access to sites of care where patients can receive the needed services

Global adult lifetime risk of maternal mortality*:* The probability that a 15-year-old woman will die eventually from a maternal cause

Health system related factors: WHO defines a health system as, *"A health system consists of all organizations, people and actions whose primary intent is to promote, restore or maintain health"*. This includes efforts to influence determinants of health as well as more direct health-improving activities. Health systems includes; people, institutions, and resources, arranged together in accordance with established polices , to improve the health of the population they serve while responding to the people's legitimate expectations and protecting them against the cost of ill health through a variety of activities whose primary intent is to improve health.

Late maternal death: The death of a woman from direct or indirect obstetric causes, more than 42 days, but less than one year after termination of pregnancy.

Maternal death: 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 causes.

Pregnancy-related death: The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the cause of death.

Sociocultural factors: These are customs, values and lifestyles that characterize a society. They include religion, ethnicity, decision making power, family support, perception about benefits of antenatal care, exposure to media, knowledge of ANC and its benefits and participation in behaviour change and education sessions. Understanding the sociocultural factors helps a provider to know how people think about health and illness, individual behaviour, and habits that influence health, community perception about health care and importantly the interaction of culture, environment and the health seeking behaviour

Sociodemographic factors: The demographic characters refer to age, sex, and place of residence, religion, educational level, income level and marital status. The sociological characters are more objective traits, such as membership in an organization, household status, interest, values and social group.

Unemployment Rate: The percentage of the total labour force that is unemployed but actively seeking employment and willing to work.

Utilization: The extent to which a given group uses a particular service in a specified period. Utilization is usually expressed as the number of services used per year per 100 or per 1000 persons eligible for the service.

ABSTRACT:

Background: *The robust millennium development goal 5.A; "to reduce by 75% between 1990 and 2015 the maternal mortality ratio" was not met. Only a 43% reduction in maternal mortality rate was achieved globally. The WHO estimates that 62% of global annual maternal deaths occur in sub-Saharan Africa and many of the deaths occur in women who never received Antenatal Care (ANC). In 2013 for example of the 75% pregnant women in Africa who attended at least one ANC visit, only 47% attended the recommended four effective visits.*

In South Sudan, only 48% of pregnant women attend at least one ANC visit of which only 17% of them attend the recommended effective four ANC visits leading to poor pregnancy outcomes.

Methodology: *This study explored the sociodemographic, sociocultural, and health system related factors influencing ANC utilization and other factors related to access of ANC. The study was exploratory qualitative in nature, conducted in Kangapo II payam Kajo-Keji County Central Equatoria Republic of South Sudan. The insight gained from the study can provide information for improvement of ANC service uptake.*

Results: *Women's sociodemographic and sociocultural characteristics, knowledge and perceptions towards ANC and general dissatisfaction with quality of care and attitude of care givers influence utilization of ANC. Long distance to health facilities, poor roads and existence of natural barriers also influence access to ANC services.*

Conclusion: *Utilization of ANC services is associated with; sociodemographic and sociocultural characteristics of women, health system and accessibility related factors. Therefore proper use of ANC cannot be achieved by establishing health facilities without addressing the other determinants.*

Key words: Antenatal care Kajo-Keji County

Word count:12,904

INTRODUCTION:

The Millennium development goals (MDGs) are now history. During the period 1990 to 2015, the robust MDG.5A; "*To reduce by 75% the maternal mortality ratio*" achieved only 43% annual reduction in maternal mortality globally(2). According to the WHO, 800 women still die daily during pregnancy or childbirth due to pregnancy related complications (3) (4). About 86% of the deaths are concentrated in Sub-Saharan Africa and Southern Asia with Sub Saharan Africa alone contributing 62%. (5)(2). Many of these deaths occur in women who never received Antenatal Care (ANC) services (4).

ANC is an effective intervention. It is estimated that if 90% of pregnant women receive effective ANC, up to 14% more newborn lives could be saved in Africa alone and pregnant women who attend ANC classes have lower risk of pregnancy related complications(6). They receive better information on contraception, breastfeeding and baby care.

Globally, the highest pregnancy related complications occur in places with low ANC utilization like South Sudan(7).

Despite the proven benefits of ANC, globally only 70% of pregnant women attend ANC services(6)(8). In sub-Saharan Africa, only 47% attended the recommended 4 effective ANC visits in 2013(9). Worst of all, in South Sudan of the 48% pregnant women who attend at least one ANC visit, only 17% complete the effective four visits, making it the lowest compared to 39% in the East African Region(10)(11). In addition, maternal mortality ratio in South Sudan is also one of the highest estimated at 730 compared to 210 deaths per 100,000 live births in the Region(10) (12).

The government of South Sudan committed to increase accessibility to comprehensive maternal and child healthcare from 24% to 70% by 2015(13) (14). The corner stone of maternal healthcare programs is to ensure that pregnant women present early for ANC to allow early essential diagnosis and treatment of pregnancy related complications(15). However in South Sudan regardless of easily accessible maternal healthcare services, many pregnant women still choose not to attend or under-attend ANC services leading to poor pregnancy outcomes (16)(6).

As a Medical Doctor (MD) and having worked in my country South Sudan; first in Agok MSF-CH hospital Abyei Administration Area (AAA) from 2012 to 2014 and in Akobo civil hospital, Jonglei State from 2014 to 2015, I witnessed **firsthand pregnancy related deaths of women who had never attended ANC**, including in Kajo-Keji County my place of birth.

My field work experiences made me to wonder why we have fallen short in the East African region, Africa and Globally.

The study; ***"FACTORS INFLUENCING UTILIZATION OF ANTENATAL CARE SERVICES AMONG WOMEN OF REPRODUCTIVE AGE (15-49 YEARS OLD) IN KAJO-KEJI COUNTY CENTRAL EQUATORIA STATE REPUBLIC OF SOUTH SUDAN; A QUALITATIVE STUDY"*** was conceived with a view to answer this disturbing question so as to propose recommendations for improvement of ANC service uptake.

1.0: BACKGROUND TO THE PROBLEM:

1.1: Back ground to Antenatal care:

The robust millennium development goal 5.A; *"to reduce by 75% between 1990 and 2015 the maternal mortality ratio*" was not met, only 43% reduction in annual maternal deaths was achieved globally(2).
According to the World Health Organization (WHO), 289,000 women die yearly during pregnancy or childbirth; from pregnancy-related complications. This translates to 800 women dying each day and 1 in 190 adult life time risk of maternal death (3)(4). Sub-Saharan Africa and South Asia account for 86% of the deaths(5)(2). Many of the maternal deaths occur in women who have not attended Antenatal Care (ANC) and Sub-Saharan Africa contributes 62% (179,000) of the deaths (4).
Globally, only 70% of pregnant women attend ANC(6)(8). In Africa, though the WHO reported improving trend with 75% of women attending at least one ANC visit, only 47% attend the recommended four effective visits(9).

ANC attempts to segregate pregnant women according to their level of risk, so that women with specific risk factors receive special care. In addition, ANC links pregnant women and their families with the formal health system. The WHO estimates that 25% of pregnant women require special care.(17). In adequate care during pregnancy therefore breaks a critical link in the continuum of care for pregnant women, thus affecting both women and the unborn babies.

ANC has both direct and indirect benefits. Directly, ANC improves survival and health of babies by reducing stillbirths and neonatal deaths. In addition, ANC promotes and establishes good health for the mother before childbirth and during the early postnatal period. If 90% of pregnant women receive effective ANC, up to 14% (160,000) more newborn lives could be saved in Africa alone(6) and pregnant women who attend ANC classes have lower risk of pregnancy related complications. They receive better information on contraception; breastfeeding and baby care(7).

Most pregnancy related complications occur where ANC utilization is low. In 2015 for example, about 2·6million third trimester stillbirths were reported. The highest stillbirth rates were in conflict and emergency areas like South Sudan and 60% occurred in rural areas(6).The opinion that stillbirths are inevitable is a myth. Improved quality of ANC can significantly reduce stillbirth rates through early detection of infections including malaria, syphilis and non-communicable diseases (18).
However regardless of easily accessible and high quality maternal care, many pregnant women still do not attend or under-attend ANC, while some present late leading to poor pregnancy outcomes (16)(6).

1.2: Demographic characteristics of South Sudan:

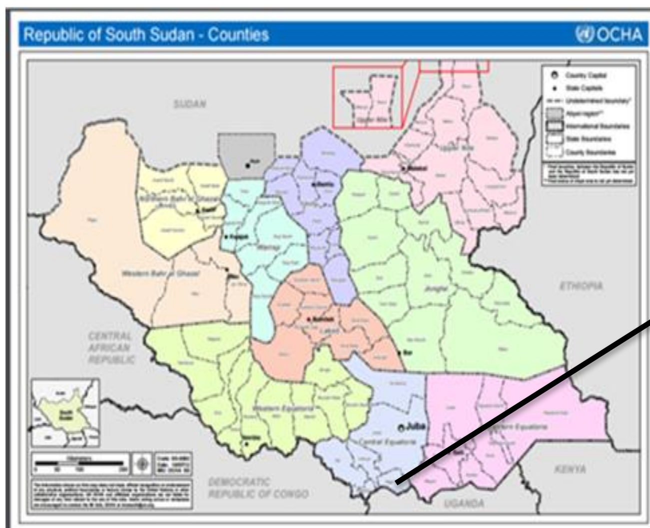
South Sudan has an estimated population of 11,425,377 persons in 2016 from 8,260,490 in 2008. This represents a 3.7% growth rate(19)(20). About 23.7% of the populations are females of reproductive age (15-49years) and 13.4% of the population lives in Central Equatoria state.

Up to 83% of South Sudan's population is rural and 51% live below the poverty line of 1$ per day. Literacy rate is equally low, estimated at 27%; 40% literacy rate among males and 16% among females for the population above 15 years. Only 22% of rural population is literate compared to 53% in the urban areas(21)(12). The majority of South Sudanese, about 56% are employed in the service sector, 42% in agriculture and only 2.4% find work in the industrial sector(22). Meanwhile 12% of South Sudanese are unemployed(23).

1.3: Geographical background of South Sudan:

South Sudan is a landlocked country located in the East African Region. It is administratively divided into 10 States and 79 Counties. Central equatorial state is found to the South of the country.

Map1: South Sudan by states and counties **Map2: Kajo-Keji County by Payams**



1.4: Political background of South Sudan:

The Republic of South Sudan (ROSS) became the youngest country in the world following its independency from the Sudan in 2011(21).The country witnessed some of the longest civil wars in the modern post-colonial era from 1955 to 2005 before independency, leading to destruction of its only public infrastructure including in health (24). South Sudan still faces challenging first years of independence. The country is mired in political tension with the Sudan and internal conflicts resulting to frequent shutdown of its main economic base, oil production; thus deepening economic crisis. The ongoing conflict which started in December 2013 reversed most of the health gains made since independency(25).

1.5: Geographical background of Kajo-Keji County:

Kajo-Keji County is one of the six (6) counties in Central Equatoria state. It is located in the southernmost part of the country bordering the Ugandan district of Moyo.
Kajo-Keji County is administratively divided into five Payams namely; Kangapo I, Kangapoo II, Lire, Nyepo and Liwolo Payams[1]. The county has a population of 260,343 people making 17.8% of total population of Central Equatoria state (19).

1.6: Health situation in South Sudan:

South Sudan inherited some formidable health and humanitarian challenges at the time of independency in 2011; however the county managed to make progress in its health sector. Up to 70% of the population has access to basic health care(20). However, more than half of the population lives more than three miles walk from the nearest primary health care unit (PHCU), the most basic healthcare facility. This is especially so for the rural 35% and poor 37% (26) (20).

Despite the reported drop in maternal mortality ratio from 2,054 at the time of independency in 2011 to the current 730 deaths per 100,000 livebirths, the country still has the highest maternal mortality rate in the East African Region (table; 1). The under-five mortality rate is also high, estimated at 99 per 1000 live births(10) (12).

Only 48% and 17% of pregnant women in South Sudan attend at least one and four ANC visits respectively, while the percentage of institutional deliveries ranges between 13.6% and 19.4% (27)(13) (11). According to UNICEF, 27.9% of girls in South Sudan aged 20-24 years old had their first birth before the age of 18 years (11).

Preventive services in South Sudan are also under developed. Only 60% of households own at least one bed-net(20) and 36% of pregnant women sleep under Insecticide Treated Nets (ITNS) while another 13% receive at least 2 doses of Intermittent Preventive Treatment (IPT) for malaria. Contraceptive prevalence rate is also low, estimated at 4%(28)(10). Similarly, only 16% of pregnant women living with HIV receive effective Anti-Retroviral (ARVs) for Prevention of Mother To Child Transmission (PMTCT) (11).

As of 2010, the Government total health expenditure in South Sudan was 4% of the GDP. Over 66.7% of the total health expenditure is donor funded(20) and 85% of healthcare is provided by International humanitarian organizations (29)(24).

There is insufficient information on ANC coverage and facility delivery rates in Kajo-Keji County. However based on experience of working in South Sudan for the last three years, it is right to assume that the ANC figures for Kajo-Keji County are not different from those of central equatorial state.

[1] A payam is the second-lowest administrative division below counties in South Sudan. Payams are required to have a minimum population of 25000.The equivalent unit in neighboring Kenya and Uganda is sub-county

Table 1: Indicators Health Status Southern Sudan; compared with average of the East Africa region

Indicator	South Sudan	Regional level averages	Indicator Key
Maternal Mortality Rate	**2,045**	210	Deaths per 100,000 live births
Infant Mortality Rate	**102**	33	Deaths per 1000 live births
U5 Mortality Rate	**135**	43	Deaths per 1000 live births
Total Fertility Rate	**6.7**	2.9	Births per women
First Antenatal visit	**48%**	78%	Visit during pregnancy
Institutional deliveries	**13.6***	65	Deliveries attended at HFs
Skilled Birth Attendance	**10%**	76	All deliveries attended by skilled HRH
Contraceptives Prevalence Rate	**<3%**	56	Use of contraceptives among CBA women
DTP3 coverage (routine)	**71 (routine)**	89	% of children vaccinated
Stunting			
Access to health care (%)	**0.2 (<25%)**	NA	Visit per person/year

Source: health sector development plan 2011-2015 Government of South Sudan Ministry of Health

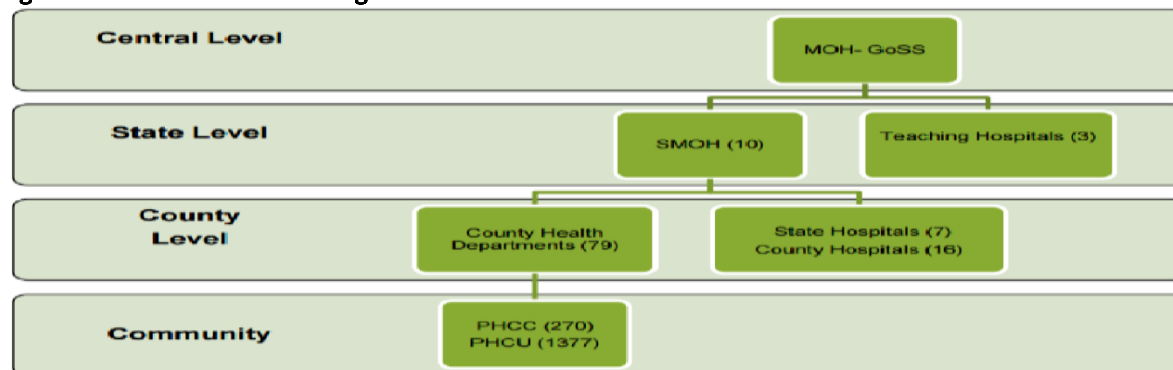
1.7: Healthcare system in South Sudan:

In line with the decentralization policy of the interim constitution of South Sudan (2005) and the Local Government Act (2009), the MoH of South Sudan operates a decentralized healthcare structure (fig. 1)(30)(28). The provision of health care services is based on the principle of a 'Continuum of Care'. The health system is structured into community, primary, secondary and specialized healthcare levels linked by referral systems. Community health care is provided by Community Health Workers (CHWs), Maternal and Child Health Workers (MCHWs) and Home Health Promoters (HHPs) (28).

The Primary HealthCare Units (PHCUs) are the first level of contact with the formal healthcare system. These units provide basic preventive, promotive and curative care for a catchment population of 15,000. The main referral level for PHCU is the Primary Healthcare Center (PHCC). The PHCCs are expected to serve 50,000 people. In addition to services offered by PHCUs, these centers provide basic diagnostic laboratory services, maternity care and in-patient care services. The PHCC refers to the County or state Hospitals. Services provided by this Secondary level of healthcare include comprehensive obstetric care, in-patient care and surgery(28).

The health infrastructure in Kajo-Keji consists of a county hospital, 4 PHCCs and 40 PHCUs distributed in five Payams in addition to two health training institutions. Health services are provided mainly by the government with support from American Refugee Committee (ARC), a humanitarian organization. ARC supports the PHCUs and PHCCs.

Figure 1: Decentralized Management Structure of the MoH



Source: HEALTH SECTOR DEVELOPMENT PLAN 2011 – 2015 Government of South Sudan Ministry of Health

2.0: PROBLEM STATEMENT and JUSTIFICATION OF STUDY:

2.1: Problem statement:

Good care of mothers during pregnancy is important for the health of mothers and proper development of the unborn babies. This is achieved through essential interventions in ANC(6). WHO recommends a minimum of four ANC visits with specific guidelines on content of care given to be effective(9) (14).

The main aim of maternal healthcare programs is to ensure that pregnant women present early for ANC; to allow early essential diagnosis and treatment of pregnancy related complications(15). In sub-Saharan Africa, these opportunities are often missed due to low ANC utilization. Most women wait until the second trimester while a substantial proportion present only in third trimester or not at all (6) (31). In South Sudan, of the 40% pregnant women who attend at least one ANC visits, only 17% complete the effective four visits, making it the lowest compared to 39% in the East African Region(10)(11).

During pre-independent South Sudan, while overall 63.7% of Sudanese women in northern Sudanese states received skilled attendance at ANC, the coverage in Southern Sudanese states ranged between 13.5% and 47%. Central equatorial had 27.5% and up to 29% of women received care from Traditional Birth attendants (TBAs) (14).
Estimates show that one in three South Sudanese women is at risk of pregnancy related complications and about 50% of maternal mortality in Sudan occurred during pregnancy, delivery or first 2 weeks after delivery (32).

In 2015, UNICEF reported improving treads in maternal health indictors in South Sudan. Skilled birth attendance increased to 19.4% and 17% of pregnant women attending at least 4 ANC visits compared to 9.3% in 2009(11) (28). While 46.7% of women attended at least one ANC visit, a substantial proportion (40.6%) of pregnant women still do not attend ANC service at all(28), (12). Additionally other preventive services including PMTCT of HIV are also the lowest in the region, estimated at 13% (9). Awareness on HIV/ AIDS among women is also low, standing at 45.1% while only 31.7% of mothers have some knowledge of PMTCT (14).

In 2009, the South Sudan Household Survey indicated that only 36% of pregnant women sleep under ITNs and 50.1%-60% of households owned at least one bed net. Wide variation existed in bed net coverage between rural (57%) and urban (72%) and household income. Whereas 65% of high income households owned bed nets, low income households had only a 53% coverage(12). Though MoH reports indicate a reduction in maternal mortality rates from 2054/100,000 in 2006 to 730/100,000 live births in 2013, these figures remain the highest in the region compared to Uganda (360), Kenya (400) and Ethiopia 420/100,000(9); despites the government commitment to increase accessibility to comprehensive maternal and child healthcare from 24% to 70% by 2015(13) (14).

2.2: Justification of study:

ANC utilization in South Sudan is closely associated with residence, education and wealth. The attendance among urban women is 58%, compared to only 34% among rural residents. Equally, 41% of richest pregnant women attend at least one ANC visit compared to only 8% among the poorest quintile. In central Equatoria, only 57.2% of pregnant women attend at least one ANC visit while 22.5% do not at all. Health facility delivery is also low ranging from 19.4% to 27.5%(12) (14)(11).

It is important to explore the factors leading to low ANC uptake, because low attendance does not necessarily imply lack of access and strategies to increase uptake should be based on realities of local context. In addition, findings from studies conducted outside South Sudan are not easily transferable.

Since there were insufficient documented studies conducted that focused on the factors influencing utilization of ANC services among women of reproductive age in South Sudan and Kajo-Keji County in particular, this study sought to provide the needed information as a bench mark for future researchers and propose recommendations for use by stakeholders to improve service uptake based on contextual findings.

2.3: Research Questions and Study objectives:

2.3.1: Research Questions:

- What are the factors influencing utilization of ANC in Kajo-Keji County?
- Why do some pregnant women come late for ANC?
- Why do some pregnant women choose not to attend ANC?

2.3.2: Study Objectives:

2.3.2.1: Overall objective:

- To explore the factors influencing utilization of ANC services among women of reproductive age (15-49years) in Kajo-Keji County, Central Equatoria State Republic of South Sudan in order to generate information for use by service providers to improve ANC service uptake.

2.3.2.2: Specific objectives:

1. To assess the level of knowledge and perceptions of women on ANC services
2. To explore the sociodemographic and sociocultural factors affecting ANC utilization
3. To explore the factors related to accessibility of health services affecting ANC utilization
4. To explore the health system related barriers and facilitators of ANC utilization
5. To provide information for future researchers and propose recommendations to service providers to improve ANC service uptake

3.0: METHODOLOGY:

The work for the thesis consists of a literature review and a field study.

3.1: Literature review:

The literature review was done to identify possible factors influencing ANC utilization, primarily to inform the field study.

3.1.1: Literature search strategy:

To explore the background to the factors influencing ANC utilization in South Sudan and Kajo-Keji County, a search was conducted to review relevant literature. Data bases such as PubMed, Scopus, KIT library, and VU library and google scholar were searched. Every effort was made to review grey literature from key websites including WHO, UNICEF, World Bank and the Ministry of Health (MOH) of South Sudan and Sudan. Regular reports from agencies implementing health activities in South Sudan and Kajo-Keji were also reviewed to obtain the latest information. Hand search for current data on ANC utilization locally available from Kajo-Keji County yielded little fruits.

Specific search words were used; antenatal care, safe motherhood, maternal mortality, pregnant woman, [low] utilization, stillbirths, maternal death. These words were either used separately or in combination with other phrases like 'sociodemographic factors', 'sociocultural factors', 'health system related factors' and ' factor of accessibility', "developing countries"', "South Sudan", "Central Equatoria", "Kajo-Keji".

The choice of search key words was guided by the Edgard-Marius 2015(33) "Determinants of Low Antenatal Care Services Utilization" model (Fig. 2)below. The search was limited to the English language. Years of publication were not restricted; however every effort was taken to include the latest information.

Where no information on South Sudan was available, information from the region was used on the assumption that the context is similar.

3.2: Field study:

3.2.1: Study type:

An exploratory qualitative study was conducted. In-depth interviews (IDIs), focused group discussions (FGDs), and semi structured key informant Interviews (KIIs) were used to qualitatively explore socioeconomic and demographic, sociocultural and religious factors, and health system related barriers to uptake of ANC services. In addition, other general factors affecting access to ANC services were explored.

Qualitative methods allowed for more in-depth exploration and understanding of the nature of the factors and how they influence the decision of a pregnant woman to seek ANC services.

3.2.2: Study area:

The study was conducted in Kangapo II Payam, Kajo-Keji County Central Equatoria State Republic of South Sudan. Kangapo II Payam is one of the five payams of Kajo-Keji County. It hosts the central business district of Kajo-Keji County. Its administrative units consist of seven Bomas[2] and 63 villages.
Selection of Kangapo II payam was purposive on account of its comparatively large size and population(73,478); about 27.2% of total population of Kajo-Keji county(34). In addition, it has the largest distribution of private health infrastructure (clinics) concentrated within Wudu Boma, the central business center which also hosts the county hospital.
Much of Kangapo II Payam is remote from the county center and is poorly served by road network. This Payam thus presents a mixed picture of urban and rural setting. This was essential for assessing the public health challenges facing the county and the possible contribution of private health providers in addressing gaps in ANC service provision.

3.2.3: Study population:

The study participants consisted of; pregnant women or those with at least a child less than two years, married men whose wives are either pregnant or with children less than two years, women leaders, health workers, cultural (chiefs) and religious leaders and Traditional Birth attendance (TBAs) (table 3).The participants were selected based on having sufficient knowledge and experiences regarding the health of pregnant women. Efforts were made to recruit participants on basis of education background, employment, marital status and or age while ensuring that they vary according to pregnancy, breastfeeding status and age of last child. This was based on the assumption that education, employment and marital status are proxy indicators of knowledge, perceptions, income level and support mechanisms which can influence ANC utilization.

3.2.4: Inclusion and exclusion criteria:

Inclusion criteria	Exclusion criteria
• Women of reproductive age (15-59years old) • Pregnant women • Women with at least a child less than two years • Husbands of either pregnant women or women with children less than two years • Resident of Kangapo II in the last six months	• Age less than 18 years and above 59 years • Not a resident of Kangapo II in the last six months • Not pregnant or without a child less than two years old

Only pregnant women and women with at least one child under two years were eligible for IDI and FGDs. Women 18years or more were considered because they were legally adults by South Sudan laws.

[2] Boma was the first town captured by the Sudan People's Liberation Army at the beginning of its insurgency in 1983. The SPLA subsequently used the town's name for the lowest-level administrative division in the territory it controlled, which continues in modern-day South Sudan

Table 2: Number and category of study participants per data collection technique

Method	Participants category	Number of activities	Total number of participants
1. Semi structured in-depth interviews with community members	Community members • Women 18-25 • Women 26-49	➢ 7 IDIs	➢ 7 persons
2. FGD (2 FGD with maximum 7 women per group) and 1 FGD with 7 men	Community members ➢ Women 18-25 ➢ Women 26-49 ➢ Married men	➢ 3 FGDs	➢ 19 persons
3. Semi structured interviews with Key informants.	❖ Clinical officer ❖ Midwife or Nurse ❖ Women leader ❖ Cultural leader ❖ TBA when found	➢ 1 person ➢ 2 persons ➢ 1 persons ➢ 1 persons ➢ 1 person	➢ 6 persons

3.2.5: Recruitment and selection of participants:

3.2.5.1: Recruitment of participants:

Participants (table 2) were recruited at community and health facility levels in collaboration with county authorities, health facility managers, women and religious leaders and village chiefs.

3.2.5.2: Selection of participants:

At the community, the village chiefs purposefully selected households for the study, guided by the established criteria outlined in section 3.3 above for IDIs and FGDs. The PI then explained the study to the eligible respondents, as outline in the consent form (Annex A&B) and requested their participation. Respondents considered for IDI were not involved in FGD.

Key informants were recruited purposefully by the PI in consultation with the county health director's office and health facility management, based on their active role in healthcare in the community, particularly maternal health(table2). TBAs were identified by snow balling through their clients. One midwife was selected from the county hospital and another from the PHCC. The number of FGDs and IDIs conducted depended on saturation of data collected.

3.2.6: Data collection technique:

The research team collected the data. Interview guides were in English and questions were translated to Kuku, by the PI at the time of data collection. Where the respondent spoke English, the questions were not translated. The data was captured by both note-taking and tape-recording. Recorded data was then transcribed after the interviews word to word.

The issues and data collection techniques used for data collection are outlined in the research tables (Annex C) and explained below;

- **Semi-structured In-depth interviews (IDI):**

Seven IDI were conducted, each lasting not more than 1.5 hours.

- **Focus group discussion (FGD):**

Three FGDs were conducted, two of which were with mothers of different age groups in a group of seven participants and one with a group of seven married men. Each FGD lasted not more than 90 minutes.

- **Key informant interviews (KIIs):**

Six KIIs were conducted with the groups as outline in Table 3 above who were considered knowledgeable and experienced on ANC. The key informants included; one clinical officer, two midwives, one women leader, one cultural leader and one TBA. Question guides for KIIs were in English and depending on the preference of KI, interviews were conducted either in English or kuku.

3.2.7: Data processing and analysis:

3.2.7.1: Data processing:

As stated in 3.5 above, up on completion of each interview, the PI and RA jointly reviewed, cross checked for completeness, discussed and coded note-scripts.
Transcribed data were coded according to themes from the analytic framework (fig2). New issues that arose during interviews were coded under new emerging theme.

3.2.7.2: Data analysis:

Analysis of the data was guided by the Edgard-Marius et al. 2015 analytic framework (Fig. 2). Content analysis of the data was done manually by comprehensive thematic categorization of issues and sub-issues by looking for commonalities, cross-cutting issues and divergence. Themes were categorized into socio-demographic factors, socio-cultural factors, health system related factors and factors related to access of ANC services. Other issues that arose were categorized as new emerging issues. An excel spreadsheet was used to support the organization of the data to assure quality within the analysis process. The analyzed data was compiled into a draft report for review by thesis advisor and back stopper before the final report.

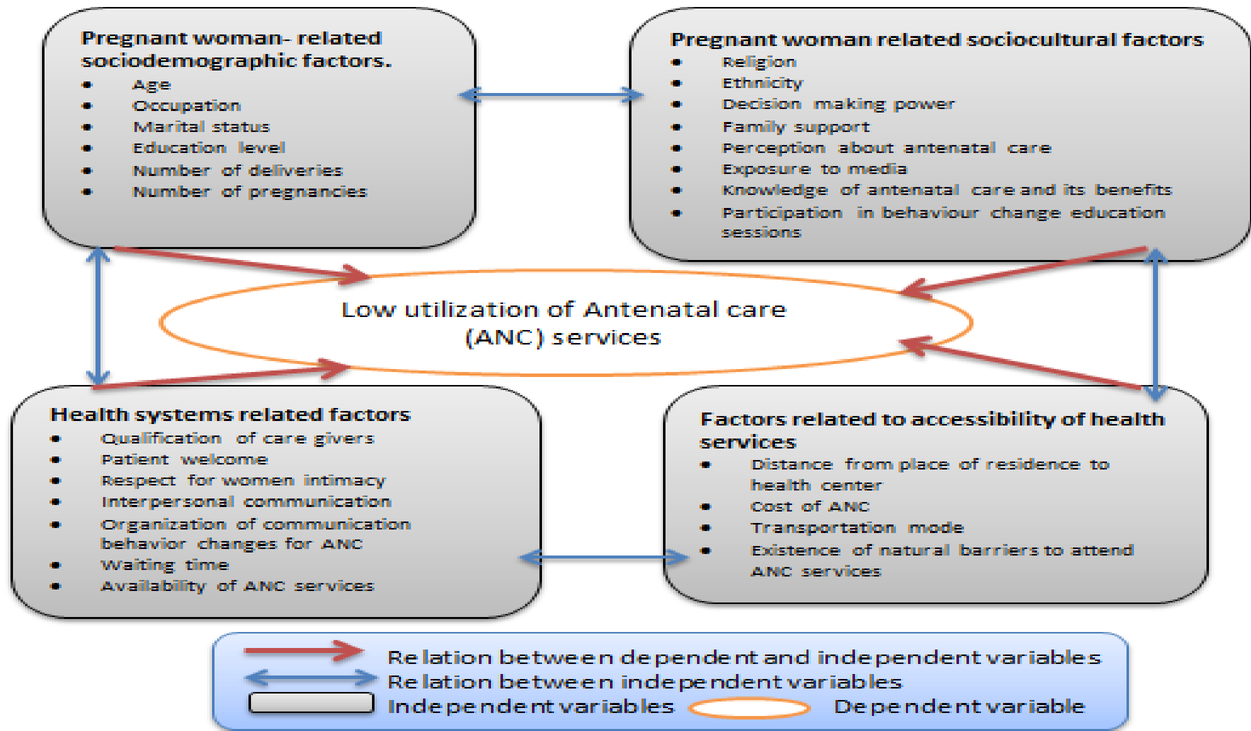
3.2.8: Conceptual/ Analytic Frame Work:

The determinants of low ANC utilization frame work Fig.2 from Edgard-Marius et al. 2015(33) explains the relationship between low ANC utilization and potential associated sociodemographic, sociocultural factors and how they influence ANC uptake by pregnant women. It further examines influence of accessibility to healthcare and inherent health system related factors and how they influence a woman's decision to attend ANC.

While the framework focuses on low utilization of ANC during first pregnancy. In this study it was used to look at low utilization of ANC for all pregnancies, in order to gain a broader insight into the specific factors influencing ANC utilization in South Sudan.

Fig.2: Demonstrates the inter-relationship of the variables in influencing ANC utilization by pregnant women.

Fig 2: Factors for Low Antenatal Care Services Utilization Model:



Adopted from (Edgard-Marius et al. 2015)

3.2.9: Ethical considerations:

The research proposal was reviewed and approved by the KIT Research Ethics Committee (KIT REC) and Ministry of Health Directorate of Research (MOH-DR) Republic of South Sudan. Final permission for data collection was granted by Kangapo II Payam Director (Annex H, K&L) and informed consent was obtained from individual participant prior to participation (Annex A &B).

Participation was entirely voluntary and participants could opt out at any time.
Information obtained was kept confidential and only used for the study. Anonymity was ensured through neutral labelling of recordings and transcripts and data will be destroyed one year after completion of the study.

3.2.10: Quality Assurance:

To ensure quality of data collected, the research protocol and data collection tools were reviewed by my thesis advisor and back stopper to ensure they meet minimum standards. Due to time constrains, pretesting of data collection tool was not possible however the tools were discussed with a team knowledgeable about ANC and South Sudan context in KIT.
The RA was trained by the PI for two days on data collection techniques and her competency was field-tested in Kangapo I Payam prior to data collection.
As indicated in 3.2.6 above, data was digitally recorded in addition to note-taking concurrently done by PI and RA. Data validation was assured via triangulation.

A variety of data collection techniques outlined in 3.2.6 were used to maximize ability to capture the required information and manually analyzed as stated in 3.2.7. The preliminary results were discussed with thesis advisor and back stopper before the final report.

3.2.11: Dissemination and use of data:

For purposes of feedback to stakeholders, and participants, findings will be disseminated in a dissemination workshop to be organized in Kajo-Keji after defense of the thesis. Findings will also be shared with MoH, Kajo-Keji County health department and sponsors as hard copies or electronically.

4.0: RESULTS:

4.1: Results from literature review:

4.1.1: Socio-demographics factors:

This section focuses on characteristics of mothers such as age, education level, income level, marital status, occupation, religion, average size of family, average age at marriage which are believed to significantly influence ANC utilization by pregnant women.

According to Raatkainen et al (16), Non-attenders and under-attenders of ANC are often young, unmarried and less educated. In a cross sectional study by Gunn et al (35), uptake of HIV testing was significantly associated with age. With exception of Uganda where more (83.2%) younger women received HIV testing as part of ANC, generally more older (62.2%) women received HIV testing as part of ANC compared to 56.7% among teenage women.
Similarly, Simkhada et al(36) in a systematic review found childbearing before 20years was associated with fewer ANC visits and women in their thirties attended ANC early and more frequently. In Uganda, teenagers and women who conceived accidently sought ANC poorly. They expressed fear, shock and hate for their pregnancies. Interestingly, few women at the end of their reproductive life sought ANC from trained health workers. Majority of them feared being attended to by comparatively younger female health workers (37).

Women's education is a predictor of ANC visits. According to a systematic review, women with higher level of education received the recommended number of ANC visits and start ANC early and ANC use also increased with husband's educational level (38) (39). Women with education above primary (88.7%) used ANC services more than those with education below primary (76.5%). Ali et al(40) equally found that 85.4% of women with husbands' education below secondary did not attend ANC.
Similarly Gunn et al(35) found 88.0% of pregnant women with tertiary education received the greatest HIV testing than those with secondary (66.9%), primary (61.5%) and no education (43.1%).

A systematic review found employment status, paid job and work outside the family associated with increased ANC use and early visits (38). However women married to jobless or husbands who do laborious jobs had inadequate ANC compared to those whose husbands work in other jobs. Similarly early ANC attendance increased with household expenditure, (41). In addition, women with formal employments and service employment made the minimum 4 ANC visits relative to unemployed women (42). In Sudan, Ibnouf et al (39) found that ANC use is high for women of high socioeconomic status compared low socioeconomic status women and low socioeconomic status women used health centers more while high socioeconomic status women used hospitals more for ANC. Zeine et al (43)however found no association between level of income and ANC utilization in Ethiopia.

According to Simkhada et al (36), marriage and age at marriage influences ANC use. In this study, more married women received ANC and sought ANC earlier than single or unmarried women. In addition, women from nuclear families use ANC less than those from extended families.

In Ethiopia, husband's support was important in encouraging ANC attendance by women. A study found more married women attended ANC compared to unmarried women and all (100%) women who were encouraged by their husbands attended ANC. This study however found a relatively high proportion (55.2%) of divorced women attending at least 1 ANC visit (44).

4.1.2: Socio Cultural factors:

A systematic review by Hajizadeh et al (45) revealed a relationship between ANC attendance and women's culture, values, norms, religious beliefs, and language barriers. In addition, timing and frequency of ANC were also associated with religious differences. For instance, some Muslim women refused to attend ANC classes because they were not exclusively designed for women.

Knowledge and perception about ANC and its Benefits:

Several studies demonstrated the influence of knowledge and perceptions on ANC utilization. A systematic review found ANC use associated with knowledge of; family planning, dietary intake, danger signs of pregnancy and risk factors associated with adverse pregnancy. In addition, women with prior history of obstetric problems attended ANC more and early (38).

In Uganda, Kisuule et al (46) found women with knowledge of right gestation age to start ANC attendance did not see the benefit of early ANC attendance since they had no problem with their pregnancies. Similarly, Gross et al (47) found 87.8% of women did not know their pregnancy status and women who booked late perceived that it was the right time to start.

Danger signs such as persistent vomiting, anemia and hypertension were common reasons for regular ANC visits (48). In Ethiopia e.g., apparent perception of good health and being occupied with family duties were major reasons for non-ANC seeking. The belief of pregnancy being a risk (91.4%) and planned pregnancy (58.7%) increased ANC services utilization (49).

In Uganda, mothers with poor obstetric history attained at least four antenatal visits and initiated first visit in first trimester (50). However, in Kenya, mothers who wanted pregnancy later and those who did not want it at all were less likely to initiated first ANC visit during first trimester (51).

According to Okutu (42), Large number of living children born to a woman decreases her likelihood of attending the recommended four antenatal visits. In this study more women with only a child made the minimum recommended 4 antenatal visits than women with six or more children.

Influence of culture, mass media and other sources of ANC information:

Several studies pointed the association of culture, exposure to mass media and other sources of ANC information with ANC attendance. Culture influences timing of ANC visit (52) (53). These studies found that revealing pregnancy before a specific time was culturally inappropriate.

The ideal time to reveal a pregnancy was when the pregnancy was visible to all. This was due to cultural and religious beliefs that early disclosure of pregnancy through ANC attendance could lead to unwanted spiritual pregnancy complications.

However a systematic review found that exposure to mass media e.g. radio and Television (TV) is a predictor of ANC use. It found women with high level of exposure to mass media received ANC more and watching TV substantially increased the chances of women seeking ANC, (38). In Uganda, access to media (radio) influenced significantly the frequency but not timing of ANC visits (50). Similarly in Malawi, maternal exposure to mass media campaigns increased use of maternal healthcare services and improved male participation in maternal and child care.

According to Edgard-Marius et al (33), prior participation of women in behaviour change communication (BCC) on pregnancy increased ANC attendance. However in Uganda health workers were more important source of information on ANC. In this study, 72% of women stated health workers as their main source of awareness on ANC (54)

Decision making power in the household and family support:

Woman's autonomy and ability to decide can affect ANC utilization according to a systematic review (38). In this study, husband's refusal for a woman to attend ANC was a major reason for non-utilization of ANC and women from male headed households attended ANC less. Husband's refusal was due to need for the company of another adult prior to attendance of ANC. Similarly in Kenya, women with autonomous decision making power were more likely to attend at least one ANC visit and initiate ANC visit early(55). In Malawi, Christina (56) e.g. found that ANC attendance was related to the need to obtain permission before visiting the clinic and majority of women obtained permission from husbands. Women who sought permission or waited for permission before visiting ANC attended less than 4 ANC visits. Further in Nigeria, Azuh et al (57) found that husbands exercise overwhelming decision making power including in health and treatment place. "*He does not only decide when and where to go*". This limited ANC attendance.

According to Kisuule et al (46) in Uganda however family support influences decision to attend ANC. He found that more women attended ANC after a joint decision between husbands and wives compared to when decisions were taken by women or husbands alone. While in another study, males don't feel as part of a couple when they were excluded from supporting women during pregnancy (58). Gross et al (59) found that women who did not receive right advice on recommended time to start ANC were more likely to book late for first ANC visit. In some instances, older women did not consider ANC essential during pregnancy, and often discourage their daughters-in-laws from attending ANC. Women who felt friends and other family members were unsupportive attended less ANC visits compared to other women (36).

4.1.3: Health system related factors:

Satisfaction with services offered:
Health system features, services or relationships of providers with clients can either encourage or discourage pregnant women from seeking healthcare. A systematic review found quality of services, negative attitude of healthcare workers and power relationship between healthcare workers and women as major barrier to ANC uptake (38)

According to the WHO, every woman needs respectful maternity to prevent physical abuse (60). Failure to respect will lead to dissatisfaction with the services.

In Nigeria e.g. 61.4% of women were dissatisfied with ANC services provided at the health facility and 38.6% registered displeasure at the health facility (57). Similarly Ali et al (40) in Sudan found non-ANC attenders claimed that the ANC service is of no value. While in Tanzania, more women were satisfied with ANC services in terms of staff approach, laboratory service, privacy, waiting time, and general service (47). Similarly a study in Ethiopia found most participants rated the service as good or satisfactory though inadequate skilled professionals, manner of some health providers, shortage of equipment and lack of privacy was a cause for dissatisfaction (48).

Ownership of ANC facility significantly influenced satisfaction. E.g.in Uganda, Bbaale (61) found more women use ANC in government facilities though more women used all components of ANC in private facilities compared to government facilities. While Tweheyo et al (62) found male ANC attendance was more common in government facilities in Ethiopia.

Staff attitude, communication and waiting time:
According to Simkhada et al (36), negative attitude of service providers were barriers to ANC utilization. Similarly in Nigeria, Idemundia (63) found non-attenders of ANC were not comfortable with the attitude of providers.
However Birmeta et al (48) found that most (91.2%) ANC users believed that health workers are respectful though participants of FGDs stated that some health workers were not polite to women especially during labour. This study also found more respondents were satisfied with waiting time for ANC services.

In Benin, waiting time affected ANC utilization. Waiting over 4 hours was associated with non ANC attendance. In this study, costs of ANC, availability of trained providers, respect of women's intimacy and interpersonal communication had no influence on ANC attendance (33).

In Ethiopia, lack of confidentiality was associated with low ANC attendance (48). The study found a woman was quoted saying," *some of the women fear HIV test during ANC visit because If the result is positive other people may know about them being HIV positive*" demonstrating lack of trust and confidentiality in the health workers. Similarly in Uganda, more women refused HIV test because of lack of confidentiality of result from staff (64). Meanwhile Tweheyo (62) found that 29.7% of males did not attend ANC with their spouses due to fear of HIV test.

4.1.4: Factors related to access of ANC services:

Many developing countries lack resources to make facilities available in rural areas. The obvious disparities in health outcome indicators between urban and rural areas are a result of poor access to healthcare services, in addition to other factors like low education level.

Distance to the nearest facility:

ANC use can be influenced by accessibility of services, mainly due to factors such as place of residence and transport to the health facilities. In a systematic review, women in urban areas used more ANC than rural women. In addition, urban women were more likely to use ANC from healthcare professionals and distance to health facility was associated with ANC use. Increase in distance or travel time to the nearest health facility lowered ANC visits and uptake (36).

According to the WHO, none attenders of ANC are mostly rural women. The WHO found 86% and 61% of women attended at least one and four visits respectively globally. In contrast, the attendance was only 65% and 39% among rural women respectively(65).
Okutu (42) described rural women in Uganda as disadvantaged. He found only 46.1% of rural women attended at least 4 ANC visits compared to 62% in the urban and most facilities concentrated in urban, reducing distance and transport cost for the urban women while increasing availability. Similar studies were seen in Sudan, Ibnouf (39). Gunn et al (Gunn et al. 2016) similarly found more urban (67.5%) women than rural (55.5%) tested for HIV during ANC. In Kenya, mothers who travel less than one hour for ANC were more likely to initiate early ANC or have the recommended 4 ANC visits (55).
In Zambia however distance did not influence first antenatal visits. Improvement in level of ANC provision at the closest facility was associated with increase in ANC utilization (66)

Transport constrains:

Uncomfortable transport, poor roads and difficulties in crossing big rivers were major barriers to ANC utilization (38). A study found most women indicated transport cost as hindrance to accessing maternal health services and 69% of women foot to the facility in an event of need due to transport constrains (67)
Similarly in Nigeria, Idemundia (63), found more rural women did not attend ANC due to logistical and financial reasons and according to Edgard-Marius et al in Benin (33), transportation mode was associated with low ANC utilization. Women who walk for ANC were less likely to attend the service.

Affordability and cost constrains: Affordability relates to cost of services, socioeconomic factors or household income, employment status of women or husband. Non-use of ANC services mainly relate to financial constraints. These include cost of services, including necessary laboratory tests (38). In this study, women who perceived ANC services from private facilities as superior used ANC less due to high costs. However free or subsidized services increased ANC use. Similarly lack of money was a major reason for non-attendance of ANC in addition to lack of transport to health facility (42). In Tanzania up to 45% of women lacked cash income for ANC. Majority only managed to pay for ANC consultation (68).

4.2: Results from field study:

The results present the sociodemographic characteristics, sociocultural factors, health system related factors and factors related to access of ANC which influence the utilization of ANC by a pregnant woman.

4.2.1: Sociodemographic factors:

Table 3: Sociodemographic characteristics of respondents

Demographic Variable	IDI (N=7)	FGD (N=19)		KII (N=6)		Total number of respondents	
Age	**Female N=7**	**Female N=12**	**Male N=7**	**Female N=5**	**Male N=1**	**Female N=24**	**Male N=8**
18-28	3	4	1	0	0	**6**	**1**
29-39	3	6	4	2	0	**12**	**4**
40>=<49	1	2	2	3	1	**6**	**3**
Total	**7**	**12**	**7**	**5**	**1**	**24**	**8**
Formal Education							
Non	1	1	1	0	0	2	1
Primary	3	6	2	0	0	9	2
Secondary	2	3	2	0	1	5	3
Above secondary	1	2	2	5	0	8	2
Employment status							
Not-working or House wife	5	7	3	1	0	13	3
Family / own Business	1	2	1	0	0	3	1
Fully employed	1	3	3	4	1	8	4
Marital status							
Married	6	10	7	5	1	21	8
Separated/divorced	1	1	0	0	0	2	0
Widowed	0	1	0	0	0	1	0
Never married before	0	0	0	0	0	0	0
Pregnancy status of respondent or Wife							
Not pregnant	1	4	1	4		9	1
Pregnant	2	3	3	0	0	5	3
Breast feeding	4	5	3	1	1	1	4
Number of deliveries							
No child	1	2	2	0	0	3	2
1-3	1	5	3	0	0	9	3
4-6	4	4	2	5	0	1	2
>=7	1	1	0	0	1	2	1
Religious affiliation							
Protestant	4	7	6	4	1	15	7
Catholic	2	3	1	1	0	6	1
Muslim	1	1	0	0	0	2	0
Others	0	1	0	0	0	1	0
Family size							
1-4	2	3	1	0	0	5	1
5-8	5	9	6	5	1	19	7
Walking time to commonly used ANC clinic (in minutes)							
<30	1	3	2	0	0	4	2
30-60	3	2	2	5	1	10	3
>60	3	7	3	0	0	10	3

KEY: **ANC**=Antenatal Care; **FGD**= Focused Group Discussions; **IDI**= In-Depth Interviews; **KII**= Key Informant Interviews; **N**= Number

Overview of sociodemographic characteristics:
Most respondents were in the age range 29-39years old, and had attained basic primary and secondary education. The majority was unemployed and most women were housewives. Only few either operated small scale businesses or worked in the public sector. Most of them were married and lived in union with their spouses. Majority of the mothers were breastfeeding. Most of the respondents had between 4 and 6 children and lived in extended families. The commonest religions were Protestant and Catholic.

Age of mother:

Teenage mothers were poor seekers of ANC yet most of them had their first pregnancies. Majority of them had conceived while in school. The commonest reason for non ANC attendance among them was fear of being seen pregnant. Only few complained of lack of money. Few in this group sought assistance from the health facility. E.g. a 19year old FGD participant said

"…I wanted to attend ANC but I couldn't go because I feared being seen pregnant. I was young and stopped schooling because of pregnancy. This I belief is the case with other young girls…"

Another 18years old said...

"… To me my problem is lack of money. I don't work and my husband is a student. If I need money, my mother is supposed to help but sometimes she does not also have…."

According to one KI, most teenage girls rely on elderly women in the village for ANC services. She said...

"...a lot of school girls get pregnant and they fear to go for ANC because of shame until the pregnancy is prominent. Some of these girls don't have proper partners. Usually if a girl gets married in a proper way, they are supported by their partners or the family of the husband…"

Education level:

The study found most women with low education preferred services of TBAs because of their perceived experience. While some feared HIV test. ANC services provided by professionally trained healthcare givers were preferred by women with higher education.

During a FGD, a 40year old mother of 7 stated….

"…these TBAs give better advice because they are more experienced than the nurses. If your baby is not lying well, the TBA can adjust it for you. In the hospital, some of the nurses are young people and have not even had children. I belief this is one reason why many mothers still go to the TBAs for ANC and delivery"

While a KI, said…..

"…If a mother suspects she is HIV positive she will not come for ANC because she will be tested. They fear HIV tests and that is why they prefer the TBAs..."

Employment status and availability of money in the house:

The majority of women in this study were housewives. Only few engaged in small scale business for subsistence purposes. Most of them depended on their husbands for financial support*.*

The study found employed mothers with low family support reporting fewer ANC visits. They reported high cost as the major problem as explained by this 29year old prison warden during a FGD……

"…This problem of money affects even those of us who work because you can't go to that hospital and you come without spending money. Everything they tell you to buy. In addition you have to pay for all the tests. Sometimes the choices are limited, you either go when you have the money or you don't when you don't have…"

Marital status and family support:

Most respondents were married and lived in union. Many of the Teenage mothers however had unintended pregnancies. Though not officially married, they lived with their [husbands].

Nearly all the respondents reported being supported by their husbands to attend ANC. However those mothers who were officially married reported more support and ANC visits that than those not officially married.

"…My husband is supportive. He helps me with some of the family duties and advises me not to do heavy work. When I go for ANC, he takes care of the children…"

*"…He was very happy when I told him of the results of the pregnancy test; the following day he came with the maternity dress and requested me to start attending ANC…."*a mother narrated her story when she got her first pregnancy.

While this 18year who conceived accidentally had this to say……..

"…I didn't tell anyone about my pregnancy until my mother discovered. I was a student and my [husband] was in school, I didn't know what to do. He was only told when they escorted me to their home…"

4.2.2: Sociocultural factors:

Knowledge and Perceptions of ANC and its benefits:

The study found varied perceptions and beliefs about ANC and its benefits. In one FGD e.g., a mother stated"…*I go for ANC to get a card for delivering in the hospital; so that incase the delivery is difficult, I can be assisted by a trained person…"*

Though this perception was not widely shared it represented an important perception in influencing ANC utilization.

Overall, nearly all respondents believed that ANC is important to both mothers and their unborn babies. Early identification/detection and or treatment of maternal illnesses such as; 'low blood level' (Anaemia), HIV, malaria and syphilis were most stated.

While other reasons included advice about pregnancy, breastfeeding and Family Planning and to know the welfare and lie of the baby in the womb. Most teenage respondents were however not sure of the reason for attending ANC. In addition, they were insecure on their perceived importance of ANC to both mothers and their unborn babies.

E.g. one mother said

"*…ANC helps the mother to know how the baby is lying in the womb. Like today, the nurse told me that the head of my baby is still up yet I am about to give birth…"*

"…ANC helps the mother because the advice they give especially on issues of HIV can prevent the disease from passing to the baby. During ANC if they find that you have HIV, they will advise on how to feed the baby"

"...To me the most important reason for attending ANC is to know my HIV status, whether am HIV positive or negative. They told us to know our HIV status when we are pregnant…"

While some teenage mothers said

"*…I don't know why people go for ANC. I was taken for ANC when I was sick. I lacked blood..."*

Knowledge and perception of ANC services offered:

The study found a wide variation in perception on services received during ANC visits; across age, place of residence and sex. HIV and syphilis testing was most identified by male respondents while Health education and maternal examination of pregnancy were most identified by females. Others services mentioned most included treatment of maternal illnesses e.g. malaria, HIV and Anemia as explained by one respondents on PMTCT program who said

"*…Like for me, I am not normal. I am HIV positive. They started me on ART. They also told me that if my breasts have wounds or the child starts teething, I should stop breastfeeding to prevent the child from contracting HIV….*"

A female respondent who disagreed with some of the teachings during ANC stated

*"…They educate us a lot. I remember they told us we can have sex even when we are pregnant…but this is against our culture...According to my culture, a pregnant woman should not have sex until 40 days after delivery…"*she said.

During one FGD, some mothers wondered why they give blood building tablets "ferrous" to pregnant women during ANC visits when they cause a lot of bleeding during delivery

"…Sometimes they also give us ferrous but why yet it causes a lot of bleeding during delivery…?.

This perception was confirmed by a KI, a nurse in charge…..

"…mothers don't want ferrous sulphate and quinine. They said quinine is bitter and ferrous causes heavy bleeding during delivery…"

Antenatal care service seeking patterns:

The ANC seeking pattern of most women was inconsistent with the medical recommendations. Few mothers reported attending ANC during the recommended first trimester period (first three months of pregnancy following conception). Most mothers identified the 4th and 5th months as the recommended time to start ANC attendance. Interestingly majority believed that a pregnant woman should attend more than 4 ANC visits. Most teenage mothers however did not know when to start first ANC or the effective number of ANC visits. Some were reminded to start attending ANC but refused to attend. E.g. a teenage mother said

"..During my last pregnancy they told me to start ANC after 3 months and I started in the fourth month. I was told my baby was growing well and I started moving every month until I delivered…"

"…My mother in-law told me to start attending ANC at four months but I was not going…"

This attitude towards ANC was explained by a TBA who said

"…Those mothers who attend ANC are those who are married officially because they are not ashamed of being pregnant. Here if you are not officially married you feel ashamed when you get pregnant. They wait until the pregnancy is prominent..."

The study observed inconsistencies between reported recommended time to start ANC and number of effective ANC visits, and the actual time and number of ANC visits reported. Some women reported early starting time but made less number of visits while some reported late starting time but reported more number of ANC visits.

Influence of culture, mass media and other sources of ANC information:

Exposure to mass media increases awareness on health issues. ANC and other maternal health programs on radio, TV and news print can increase awareness and subsequently uptake of the service by mothers.

Few respondents had access to functional radios and almost none had TV. Most respondents used Phone radio to tune to local radio programs. However nearly all respondents expressed lack of ANC programs on their local radio stations…..

…*"…I don't have a radio or TV but I use my phone if I need to listen to radio…"*

"…I do listen to our local FM radio programs most times but there are no programs on ANC… …sometimes back there used to be programs on ANC but not these days…."

None of the respondents reported participation in behaviour change communication (BCC) sessions outside ANC clinic setting.

Though health education sessions during ANC appeared the most common source of information on ANC, mothers attending ANC in rural facilities reported lack of health talks while a good number of them reported TBAs, biological parents and other elderly women as important sources of information on ANC.

Few mothers reported membership to social clubs e.g. the “women on the move movement” (a local women football club), and the “Loving club of Kajo Keji” (social club for people living with HIV) as important sources of information on ANC. Majority of young mothers however preferred advice from relatively young women friends

“…I went to the health center and they told me nothing about my pregnancy…”

While a mother who received services from a TBA said
“…Our mothers here are good. You just need to be close to them to get their advice…”

E.g. a HIV positive pregnant mother said
“…Am a member of the loving club. We discuss issues such as how to prevent transmission of HIV to our unborn babies a lot…”

An 18year old mother said
“…During my first pregnancy I used to fall sick and my sister in law used to advise me a lot. She liked telling me not to take medicines anyhow unless they are given by a trained person because they will affect my baby…”

Decision making power and family support:

The ability of a mother to decide can influence ANC attendance. However decision making power is not often independent of the woman’s family and social support structures. Most of the respondents lived in extended families. Though the majority reported overwhelming family support, most expressed little decision making power. This study noted that in extended families where both fathers and or mothers live together, they made most decisions but husbands still provide the necessary financial and material support. Few mothers reported absolute decisions making powers including those on ANC attendance.

E.g. a 35year old mother
“…The culture here is that when you are pregnant you need a free maternity dress and he normally buys new one in each pregnancy. He is very supportive “

While anther mother of 18years said….
“…My husband is in school. Normally, my in-laws make the decisions and I follow, but my father in-law takes the most decisions. Like the other time he told my mother in-law not to give money for transport for going for ANC. I was unhappy but usually by the time he tells me sometime he has decided and I can’t do anything about it...”

According to a KI, mothers who failed to convince those who make decisions or provide support attend less ANC visits or not at all

"…Some of our grandparents still belief that our parents delivered without attending ANC and why waste money. If you fail to convince them, they won't support you… this is one problem most mothers still face…"

4.2.3: Health system related factors:

Satisfaction with services offered:

Nearly all mothers attended ANC in government health facilities. Few received services from TBAs and almost none sought ANC services in private health facilities. Almost all respondents reported lack of alternative ANC service providers to the government facilities. Overall, most respondents expressed dissatisfaction with the level of care. Those who reported satisfaction mentioned PMTCT and health education sessions as the most satisfying services. In addition, the need to know one's HIV status was the most compelling reason to attend ANC in the hospital.

A male participant said…..

"…Look at this place; there are no alternative clinics to provide ANC services. The only available private clinics here are drug shops. They sell simple paracetamol and drugs for malaria…."

E.g. this female respondent said during a FGD….

"...The quality of ANC services is very poor. Mothers die a lot here during labour, they delay mothers. In the health centers, there is no staff; in the hospital, the hygiene is poor, mothers wait for long and staff have poor attitude……. These nurses! I don't know if they are taught to insult mothers. They frustrate with their insults…."

"…the ANC services offered in the hospital are better. In the PHCC and PHCU, there is no staff and they don't do any tests. Mothers have to go to the hospital for tests before attending ANC in the health centers…" said a male FGD

While another mother said…..

"*…First the education they give on various topics is very important, the HIV tests are free. Like me if they had not educated me and tested me, I would have not known that I am HIV positive and I would be dead now…."*

Qualification of caregiver:

ANC services were predominantly offered by Nurses and midwives. Respondents gave a mixed feeling with regards to quality of care received from care givers. Some felt the service was good while some where not happy with the service. Few respondents expressed trust and satisfaction with services received in PHCCs and PHCUs than in the hospital.

A 19year old mother said….

"…They made me survive. I had no blood but the nurse struggled until I was given blood and I was happy with her…"

During FGD one male said…….

"…The staff is not qualified. Sometimes they tell you that the pregnancy has a problem but when you go and confirm in the hospital, it turn out that there is no problem…."

According to a KI, there is no sufficient staff in all the facilities. Some facilities have only one staff.

"…..the *lack of qualified staff is true. Like here in ANC department, we have only 3 qualified staff with the highest qualification being a diploma. TBAs are still working even in the hospital and yet the ministry knows that TBAs take long to learn the new teachings. What can we do...?"*

Opening and closing time:

Most ANC clinics operated from 9am to 2pm. There was a mix opinion on clinic closing time with majority preferring 24hour ANC services. While women receiving ANC in the hospital seemed comfortable, those receiving in peripheral facilities prefer 24hours opening. Most of them argued that this closing clinic time discourages distant clients

"…The clinic in our facility opens at 9am and closes at 1pm. If you fall sick and the health facility is closed who will help you…?"

"…Like some of us who come from far, many times we reach late when they are about to close and they quarrel. This discourages…."

"…I think closing ANC at 2pm is okay since the maternity wards operates 24hrs and in case of an emergency, one can get help there…."

Staff attitude, communication:

Poor staff attitude was the most discouraging factor while seeking ANC services both in the hospital and PHCCs/PHCUs. Most respondents described nurses as quarrelsome, repulsive and unwelcoming. Majority however believed that good communication by staff is a stimulus to attend ANC.

"*…Those nurses can quarrel. They harass us on simple things. They quarrel if you go late, especially after 9am. They can even quarrel in front of other clients. Sometimes you go late because of other reasons but they don't care..."*

"... They said I was young to conceive. They quarreled at me and even my mother in-law could not do anything. How can you go back there?" A mother of 18 narrated her story.

While another mother said…

"*…..the nurse talked to me well. When she found I had malaria, she wrote the drugs and said we lack drugs. She advised me to buy and I was happy. I think many people will be happy too if talked to in this manner…* but *…The worst thing with nurses is that they don't even bother welcoming us…"*

According to a KI what discourages mothers is presence of students in the clinics.

"….mothers fear coming early because they said they will be examined by students who delay them. If they see students around, few come…"

Waiting time:

Respondents reported an average waiting time of 1hour during ANC visits. Few respondents believed that many clients and inadequate staffing is the cause of long waiting time. Majority complained of reluctance of staff to attend to clients on time.

"…I think this waiting time of 1hour is a lot; at least 30 minutes. But sometimes you see them working and patients are many…"

While a 36years old mother of 7 said;

"...they tell you to wait while they sit doing nothing. They expect you to wait like you have nothing to do at home…."

Privacy:

Privacy influences ANC use but what is considered private differs among cultures and individuals. A secure ANC room was a marker of privacy to most respondents and majority considered the place private. No mention was made about confidentiality of information as a marker of privacy even after probing.

E.g. this 21 year old tailor said,

*".With regards to privacy, the examination room is good, and in fact you can undress without fear of being seen…"***….** implying freedom from public exposure.

However a KI said
"… about privacy, the building is here. It is nice, the rooms are okay but we lack curtains and screens to ensure privacy of the mothers during examination…"

4.2.4: Factors related to accessibility of ANC:

Distance to nearest facility and other barriers:
The main hindrances to access of ANC were long distance, poor roads and natural barriers. The minimum walking distance to the nearest health facility was 1hour. Mothers living closer to the health facilities reported more ANC visits during their last pregnancy overall.
However those living closure to the hospital reported more visits than those living closure to PHCCs or PHCUs. Majority of mothers complained of long distance to the health facilities and flooding of the streams as the important barriers while accessing ANC services.
"…To me the main problem is our roads. There are a lot of gullies. No vehicles can reach here. During rainy season like now the stream has flooded and one has to wait until its volume reduces. In case of emergency someone has to carry you across on the back which can be very dangerous also…"

During FGD, a male stated…..
"….Some of our mothers fear to walk to the health centers because they are far. The problem is when they get complication it is even difficult to transport them on a motorcycle and some end up dying…"

While a KI said "…*most women prefer near health facilities but most are not well equipped...*"

Availability of transport means:
Few mothers reported owning transport means. Motorcycle or bicycles were the most available transport modes identified but often shared by the entire family. Majority of the respondents reported walking to the health facility. Those participants whose husbands own a motorcycle e.g. reported occasional use for ANC visits, often during emergencies or ill health. Most of the women preferred to walk to avoid physical discomfort associated with travelling on bad roads though a few also report high cost of transport or lack of transport.
"….I prefer to walk to the hospital. It takes me 2 hours because I have to go slowly, but sometimes my husband wants to go with me and in this case we have to use a motor cycle which is very uncomfortable…"

"…I walk to the facility because I lack money to hire a motorcycle. If am to hire a motor cycle, it will cost me 200SSP (about 6 dollars)…"

Affordability /Cost constrains of ANC services:

Financial constraints were major factors in non-use of ANC services. All respondents reported that services are ideally free in the government facilities. There was no reported illegal payment. However, nearly all mothers stated paying for other requirements including; admission, drugs, laboratory tests and demands for assisted delivery such as gloves, cannula, and bar of soap and a kilogram of sugar after every assisted delivery

"…the staffs don't ask for money but the problem is when you deliver in the hospital, you have to buy your own gloves, cannula etc. and a bar of soap and kilogram of sugar for the nurses. Some mothers without money end up delivering at home to avoid these things..."

Similarly, another mother said…

"…our hospital is poor, everything you have to buy. In addition you have to pay for laboratory tests, maternity dress and even the drugs I am supposed to buy… This is the reason why some like me don't go there…"

According to the ANC clinic in-charge, payment of laboratory fee introduced in the hospital discourages mothers from attending ANC.

"…what discourages mothers the most is payment of laboratory services introduced in the hospital…."

4.2.5: New emerging issues:

Insecurity and Gender Based Violence (GBV): Many mothers also reported increase in various forms of crimes against women while accessing ANC services due to the ongoing insecurity;

"…for those of us who have to walk long distance on bushy roads to the health facility, you cannot be sure of reaching. There is insecurity; women have been raped or killed along the way while going to the health facility…You can't take this risk if you are not sick…"

A KI confirmed the rise in GBV cases. *"…GBV is a reality here. Like now we have 3 rape cases in the ward and most of us don't know how to deal with them..."* She requested training on GBV case management.

Low motivation of mothers and staff: Low motivation for both health staffs and mothers was also reported. Inadequate and unmotivated staff was reported to be the cause of poor services and lack of team work according.

"...I think the mothers need motivation during ANC visits. They should receive soap, mosquito nets, maternity wear etc. also the staff including the TBAs should be paid salaries and regularly…"

"The quality of ANC service is not convincing because we have few staff and their salaries are not paid regularly… ….. See! As an in charge, a staff can tell me I am not coming for duty because I am going to look for food. What can I do in this case? It is very frustrating…."

5.0: LIMITATIONS OF THE STUDY:

5.1: Limitations of methods:

- Some participants might have participated with expectation of personal benefits.
- Determination of the income level of respondents was beyond the scope of this study. This limited objective recruitment of representative numbers of poorer and richer women as markers of income levels.
- Exclusion of mothers below 18years of age was a limitation because these mothers constitute a substantial group of vulnerable pregnant women at high risk of low ANC utilization. Specific questions included about this group might have not addressed issues pertinent to them
- Quality of qualitative studies depends on the experience of the researcher in collection and analysis. This being my first qualitative study might have limited the quality.

5.2: Constraints during data collection:

1. Data collection was done amidst deteriorating security in Kajo-Keji County and South Sudan as a whole; thus data collection was limited to the three Bomas of Wudu, Jalimo and Kinyiba with relatively less insecurity following recommendation of Kangapo II Payam administrator (Annex L). Organization of FGDs was also a challenge due to the insecurity as people hesitated to gather.
2. Two key informants interviews; with the County Health Director (CHD) and a religious leader failed to materialize and had to be cancelled.
3. The study coincided with rainy and planting seasons. The Kajo-Keji community being predominantly farmers, it was challenging to collect data in the morning hours. Interviews were subsequently conducted mainly in the evenings. The planting season also made organization of FGDs challenging. All care was taken to not disrupt the farmers' routines.

6.0: DISCUSSION:

The study found several factors influencing utilization of ANC services in Kajo-Keji County. ANC is central in improvement of maternal and child health. However many factors facilitate or hinder the utilization of ANC services. These include knowledge and perceptions about ANC, sociodemographic and sociocultural factors, health system related structural factors, and factors related to access to ANC services.

Findings from these studies show that sociodemographic characteristics of women play big role in ANC utilization. Young pregnant women were under using ANC services. This is consistent with Raatikainen et at & Gunn et al (16,35) who found non-attenders and under attenders of ANC are often young and less educated. Young adolescent pregnant women tend to lack knowledge partly because most are school drop-out(16,39,48). Also, adolescent women face a lot of socioeconomic and health challenges yet they lack the capacity to address them(57,69). Many lack the capacity to decide on issues affecting their health and some do not accept the pregnancy because of shame or lack of support(55). Some studies suggest that women in their thirties use ANC more than older women and teenagers (36)(70)(37). These agree with our findings because younger and older women sought ANC services from TBA or did not at all.

Education of a woman increases the levels of awareness, autonomy and decision making power so that they are better able to realize the benefits of using maternal and child health services including ANC services (71). In this study, women with low education had poor attitude towards professionally trained health personnel because low education reinforces socio-cultural beliefs and norms (52). Azuh et al (57) argued that dissatisfaction with services can affect health seeking behavior and make women to choose for the TBA. This study found that TBAs were trusted by young and uneducated mothers, confirming these findings.

Employment status affects the pattern of ANC service utilization, because employment is related to income level, hence affordability and time required to access care. Increased household expenditures increases early ANC attendance (41). Also high income increases number of ANC visits (72). The majority of women in this study were not employed and depended on their husbands for support. This limited the women's independent decision making power to attend ANC service. These findings are different from those of Abosse (49) who found no association between level of income and ANC utilization in Ethiopia. In this study also some employed women without family support used less ANC services.

In addition, this study found that being officially married increases ANC utilization. This is in agreement with findings of Assfaw et al (44) and Atekyereza et al (37) who also found that women who had unintended pregnancies or had pregnancies outside formal marriages attended ANC less likely. Furthermore, formal marriage increases the level of family and spousal support generally and including for use of ANC services.
In addition to financial and material support, husbands encourage their women to attend ANC. Most young and un-officially married mothers poorly attend ANC due to lack of support and encouragement. The study could not establish the influence of divorce/separation as found by Atekyereza & Mubiru (37) who showed a relatively high proportion of divorced women attending first ANC visit.

Knowledge and perception about ANC and its benefits can influence the decision of a woman to seek ANC services. Though beliefs influence knowledge, knowledge also influences beliefs and practices. Beliefs about pregnancy can include for example the perception of the pregnancy being normal (healthy) or not. Experience of previous unhealthy pregnancy and knowledge of danger signs, increases timing and frequency of ANC use (36,48). ANC attendance was low among teenage mothers because of lack of knowledge of benefits of ANC and experience about pregnancy, confirming findings of (33,47). The low utilization of ANC among older and high parity women could be because of negative beliefs and perceptions resulting from previous pregnancies. In addition, these women may lack time and resources in the family limiting their ability to attend ANC.
The ANC seeking pattern of most respondents was inconsistent with the required medical recommendations. Some mothers were lazy to attend ANC possibly due to perception of having a health pregnancy, or lack of knowledge on required time to start attending ANC as found by Kisuule (46) and Gross(47). Despite receiving health education, knowledge on ANC services was generally low.

Cultural and religious beliefs and exposure to mass media have strong influence on ANC use. In some cultures, expectant mothers must observe certain norms, during pregnancy, just before labour, during labour and after birth to prevent certain perceived negative consequences to the baby, mother or both. Cultural and religious beliefs that prevent early disclosure of pregnancy limit early initiation of ANC(53).
According to Finlayson $ Downe (53), rural pregnant women avoid public appearance including ANC attendance due to shame because of the obvious relationship of pregnancy with sexual activity. In this study, the social construction that pregnancy should be for the married discourages women who conceive accidentally from attending ANC. Whether religion influences ANC use in this study was not clear since most respondents were mainly Christians of protestant faith.

However according to Kawungezi etal (54), being religious can significantly increase ANC attendance. Hajizadeh (45) found that Muslim women refused to attend prenatal classes because they were not exclusively designed for women.
Mass media is an effective tool for health promotion and behaviour change. It can unlock the barriers to maternal healthcare use posed by strong cultural and religious beliefs (73). For instance media campaigns can improve knowledge and awareness of services offered. However most respondents relied on health education acquired during ANC session and friends.

The ability of a woman to decide increases ANC use (71). But a woman is often not independent of her family. Men often control financial and material resources making it difficult for women to pay for health care costs. In this study, most respondents lived in extended families and had overwhelming family support but lacked decision making power, confirming findings of Azuh et al(57). In societies where women lack equal rights with men, access to health care is often limited. ANC use is low where women need permission before visiting a clinic(56).Traditional beliefs and fear among women in these societies contribute to low ANC utilization because of time spent to obtain permission. These traditional beliefs and fears are often strong in these societies and may explain the low ANC use.

However, it was reported that many husbands supported their wives and jointly decided on the next pregnancy, confirming findings of Kisuule (46) where ANC utilization was high after joint decision between husbands and wives. Some women did not go to health facility for advice but preferred services of TBA. Lack of correct information is associated with late booking for ANC according to Gross et al(47) and exclusion of husbands from decision making could also lead to low ANC utilization. Some women exclude men from matters of reproduction due to shyness or fear of negative reactions (58). Confirming our finding where respondents sought advice from older women instead of their spouses. Women who felt friends and family were unsupportive were less likely to attend ANC compared to other women due to this fear and shyness (38).

Most respondents received care from government health facilities but expressed dissatisfaction with the level of care. This findings confirm those of Bbaale (61), where components of ANC provided in government facilities were of lower quality than in private facilities. Most women expressed frustration because of negative staff attitudes characterized by disrespect, rude and unfriendly behaviour, insults and harassment by nurse, confirming earlier findings by Idemundia & Birmeta etal (63) (48) where healthcare workers were impolite. Some patient described the attitude of staff as repulsive, implying its potential to stop a woman from returning for service.

Several studies documented an association between ANC attendance and waiting time(47)(36). Most women complained of long waiting time because women generally have limited time due to their multiple responsibilities such as care for children, cooking, and collecting water. Some women avoid ANC to do gainful activities or resort to unprofessional care-givers who give instant services (33). This potential barrier to ANC utilization should be viewed in the context of inadequate staffing and many clients as pointed by one respondent.

Privacy was not a major concern to many respondents. Most women only perceived privacy to imply freedom from public exposure. Issues of confidentiality were not considered markers of privacy because privacy is abstractly defined by most cultures and individuals. What is private to one may not be private to the other.

Physical natural barriers, poor roads, cost constraints due to high transport and treatment cost impacted on the ability to seek healthcare services. Several studies confirmed that lack of money, long distance and lack of transport to health facility were common reasons for non-attendance of ANC (42,63,67). Majority of the studies show that, the further a facility is from a place of residence, the less likelihood of using the healthcare services offered(42,55). Rural women suffer the effect of increased distance most since they travel longer hours to access the nearest facility (36,39,42). Long distance increases cost of travel and physical discomfort during travels because of the pregnancy (36). This study confirms this, where most mothers preferred to walk to ANC clinic despite long distances due to lack of transport, high cost of transport or to avoid physical discomfort of pregnancy encountered while traveling.

Women and their families incur substantial cost when ANC requires traveling and waiting long time or payment for services. The significant relationship between economic factors and ANC utilization relates to affordability due to cost of services. Cost of ANC services, include the necessary laboratory tests and transport costs incurred while accessing ANC. Local values and customs that deny women the right to travel alone outside their immediate families to work tend to reinforce these financial constraints, incapacitating the women (57).

Religion and cultural inappropriateness related to revealing pregnancy before specific time period where unique findings in the literature review. In addition, the literature showed confidentiality as a major marker of privacy. In the field study however, did find cultural and religious factors associated with ANC use. Also, privacy was not a major concern. Confidentiality of information was not considered a marker of privacy. Women were more concerned of physical exposure as a marker of privacy. The field study also found physical barriers such as rivers/streams and long distance as a major factors in influencing access to ANC services.

7.0: CONCLUSION AND RECOMMENDATIONS:

7.1: Conclusion:

The study results show that utilization of ANC services in Kajo Keji County is associated with several factors namely; sociodemographic and sociocultural characteristics of a woman, Health system related and factors of accessibility. Therefore proper use of ANC services cannot be achieved by only establishing health facilities without considering the other factors.

Health system related factors included; inadequate skilled and poorly motivated health workforce, poor health infrastructure including; lack of basic medical supplies such as essential drugs, laboratory supplies and medical equipment, low private sector capacity and involvement in ANC service provision, poor staff attitude towards clients and lack of team work. In addition, insecurity, poor roads and infrastructure network linking communities to health facilities and natural barriers such as streams, rivers and hills contributed significantly by limiting access to available facilities.

Poor staff attitude towards clients was a major contributor of low ANC services utilization. Improving provider's attention, communication skills and attitude towards personal characteristics of mothers and addressing the basic needs of clients including education and financial independency could achieve improvement in ANC uptake.

Though low socioeconomic status of the women played a role in low ANC utilization in the county, generally pregnant women in Kajo Keji County had positive attitude towards antenatal care services. High cost of services, low level of education and high rate of teenage pregnancy, were among the leading socioeconomic factors contributing to low ANC utilization. Sociocultural factors were also contributing to low ANC uptake.

The current insecurity in the county and country presented additional challenge, reinforcing those posed by poor functioning health system, poor physical infrastructure and existing natural barriers and low socioeconomic status of women further lowering the uptake of ANC services in Kajo Keji County.

7.2: Recommendations:

1. Ministry of health and Kajo Keji county health authorities should invest in development of proper maternal health services at all levels to overcome the low ANC uptake. For example, health planners should consider outreach services as alternative remedy to overcome the challenge posed by physical inaccessibility related to long distance, rivers/ streams and hills to improve uptake of ANC services in the affected communities.

2. The county health authorities should invest resources to revitalize the primary care providing facilities (PHCC, PHCU) and county hospital through staff recruitment and motivation, sustained supply of essential medical requirements, including essential drugs, laboratory supplies and medical equipment, infrastructural development and capacity building to improve access to maternal health services. There is robust evidence to show that investment in primary care provides best returns in terms of population health gains.

3. The county health department should embark on comprehensive and community-based health promotion through awareness-raising and appropriate education of healthcare workers to improve awareness on ANC services.

4. Nurses and midwives as main providers of ANC services should be made aware of the potential barriers to uptake of ANC services. They should be trained to be sensitive to women socioeconomic situations, cultural and religious beliefs and their personal and communication skills to improve their relation with clients.

5. Further (qualitative) research should be done to explore women's perceptions of and satisfaction with ANC and other maternal health services and the role of gender in decision making, taking into account socioeconomic status of the women.

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ANNEXES:

A: Informed consent form: In-depth interviews and key informants:

Informed consent form for the study to explore factors influencing utilization of ANC services among women of reproductive age (15-49 years) in Kajo-keji County Central Equatoria State; Republic of South Sudan: A qualitative study.

Introduction:
My name is Dr. ………………a Master of Public Health Student from the Royal tropical Institute (KIT) Amsterdam. I request you to participate in this study on local belief in general and other factors hindering the uptake of ANC services in Kajo keji County as part of my study requirements. You have been chosen to participate in this study because I belief that your point of view is important for the understanding of this subject. I recognize that you are busy and I appreciate your time. The discussion will take no more than two hours.
You do not have to decide now whether or not to participate in the research. I will explain to you more about the study and then you decide. Before you decide, if you wish you can talk to anyone you feel comfortable with about the research. This consent form may contain words that you may not understand Please ask me to stop as we go through the information and I will take time to explain. If you have questions later, you can ask me.

Purpose of the research: Study is part of the study requirements for the Master of Public Health Degree. We want to study the local beliefs in general and other factors that may hinder the use of ANC services among women of reproductive age in Kajo-keji County. We believe that you can help us by telling us what you know about ANC, local beliefs and perceptions in general about ANC and other factors that may hinder the uptake of ANC services. This we belief will contribute to recommendations for improving the ANC services in Kajo Keji County.

Type of Research Intervention: This research is exploratory. It will involve you in an interview alone that will take not more than two hours.

Participant Selection: You are being invited to take part in this research because we think your experience will contribute much to our understanding of this study topic.

Voluntary Participation: Your participation in this research is entirely voluntary. It is your choice to participate or not and you can withdraw any time during the study without any consequences.
Duration: The research will take two weeks (14 days) in total. During this time if you agree, we will visit you to conduct an interview. The interview will last a maximum of two hours only.

Risks: There is no particular risk in participating in this study. We may however ask you to share with us some very personal and confidential information, and you may feel uncomfortable talking about some of the topics. You do not have to answer any question or take part in the discussion/interview if you don't wish to do so, and that is also fine.
You do not have to give us any reason for not responding to any question or for refusing to take part in the interview and not participating does not have any consequences for access to ANC services.
Benefits: There will be no direct benefit to you, but your participation is likely to help us in understanding the general beliefs and other factors hindering the uptake of ANC services in Kajo Keji County.

Confidentiality: The research being done in the community may draw attention and if you participate you may be asked questions by other people in the community. We will not be sharing information about you to anyone outside of the research team.

The information that we collect from this research project will be kept private. We may tape and write down the discussion to facilitate its recollection. Despite being taped, the discussion will be anonymous. The tapes will be kept safely in a locked facility until they are transcribed word for word, after which they will be destroyed. The transcribed notes on the other hand will contain no information to link you to specific statements. Any information about you will have a number on it instead of your name. Only the researchers will know what your number is and we will lock that information up with a lock and key. It will not be shared with or given to anyone except the research team.

Sharing results: Nothing that you will share with us will be shared outside the study. The purpose of the study is to fulfill the requirements for the award of Master of Public Health (MPH). However after completion of my studies, the knowledge that we get from this study will be shared with you and your community before it is made widely available to the public. Each participant will receive a summary of the results. There will also be small meetings in the community and these will be announced. Following the meetings, we will then share the results with the county authorities and the ministry so that other interested people may learn from the research.

Right to Refuse or Withdraw: You do not have to take part in this research if you do not wish to do so, and choosing to participate will not affect you in any way. You may stop participating at any time that you wish without you being affected. I will give you an opportunity at the end of the interview/discussion to review your remarks, and you can ask to modify or remove portions of it, if you do not agree with my notes or if I did not understand you correctly.

Who to Contact: If you have any questions, you can ask them now or later. If you wish to ask questions later, you may contact me or any of the following: [Mr.………………………….name, address/telephone number/e-mail].S/he is the County Health Director (CHD).

This proposal has been reviewed and approved by Directorate of Research at the MOH which is a committee whose task it is to make sure that research participants are protected from harm. If you wish to find out more about it you can contact Mr.…………………………………………Name, Tel, Email……………………

Certificate of Consent: I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study

Print Name of Participant: ---

Signature/thumb print of Participant------------------------------------- Date (Day/month/year) -------------------

Witness

I have witnessed the accurate reading of the consent form to the potential participant, who is my……………………….and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

Print name of witness_____________

Signature /Thumb print of witness______________ Date (Day/month/year) _________________________

Statement by the researcher/person taking consent:

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands it well. I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability.

I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily. A copy of this ICF has been provided to the participant.
Print Name of Researcher/person taking consent________________________
Signature of Researcher /person taking consent ______________ Date (Day/month/year) _______

B: Informed consent form: Focus Group Discussion:

Informed consent form for the study to explore factors influencing utilization of ANC services among women of reproductive age (15-49 years) in Kajo keji County Central Equatoria State Republic of South Sudan: A qualitative study.

Introduction:
My name is Dr. ………………a Master of Public Health Student from the Royal tropical Institute (KIT) Amsterdam I request you to participate in this study on local belief in general and other factors hindering the uptake of ANC services in Kajo keji County as part of my study requirements. You have been chosen to participate because I belief that your point of view is important for the understanding of this subject. I recognize that you are busy and I appreciate your time. The discussion will take no more than one hour and thirty minutes (90 minutes)
You do not have to decide now whether or not to participate in the research. I will explain to you more about the study and then you decide. Before you decide, if you wish you can talk to anyone you feel comfortable with about the research. This consent form may contain words that you do not understand. Please ask me to stop as we go through the information and I will take time to explain. If you have questions later, you can ask me.

Purpose of the research: This research is part of the study requirements for the Master of Public Health Degree. We want to study the local beliefs in general and other factors that may hinder the uptake of ANC services among women of reproductive age in Kajo keji County. We believe that you can help us by telling us what you know about ANC, local beliefs and perceptions about ANC in general and other factors that may hinder the uptake of ANC services. This we belief will contribute to recommendations improving the ANC services in Kajo Keji County.

Type of Research Intervention: This research is exploratory. It will involve your participation in a group discussion that will take not more than two hours.
Participant Selection: You are being invited to take part in this research because we think your experience will contribute much to our understanding of this study topic.

Voluntary Participation: Your participation in this research is entirely voluntary. It is your choice to participate or not and you can withdraw any time during the study without any consequences.

Duration: The research will take two weeks (14 days) in total. During this time if you agree, we will visit you to conduct an interview. The interview will last a maximum of one hour and thirty minutes (90 minutes) only in total.

Risks: There is no particular risk in participating in this study. We may however ask you to share with us some very personal and confidential information, and you may feel uncomfortable talking about some of the topics. You do not have to answer any question or take part in the discussion/interview if you don't wish to do so, and that is also fine.
You do not have to give us any reason for not responding to any question or for refusing to take part in the interview and not participating does not have any consequences for access to ANC services.

Benefits: There will be no direct benefit to you, but your participation is likely to help us in understanding the general beliefs and other factors that may hinder the uptake of ANC services in Kajo Keji County.

Confidentiality: The research being done in the community may draw attention and if you participate you may be asked questions by other people in the community. We will not be sharing information about you to anyone outside of the research team. The information that we collect from this research project will be kept private. We may I tape the discussion to facilitate its recollection. Despite being taped, the discussion will be anonymous. The tapes will be kept safely in a locked facility until they are transcribed word for word, then they will be destroyed. The transcribed notes on the other hand will contain no information that would allow individual subjects to be linked to specific statements.

We will ask you and others in the group not to talk to people outside the group about what was said in the group. We will, in other words, ask each of you to keep what was said in the group confidential. You should know, however, that we cannot stop or prevent participants who were in the group from sharing things that should be confidential.
Any information about you will have a number on it instead of your name. Only the researchers will know what your number is and we will lock that information up with a lock and key. It will not be shared with or given to anyone except the research team.

Sharing of results: This study is conducted in partial fulfilment of the requirements for the award of Masters of Public Health (MPH). However upon completion, the knowledge gained will be shared with you and your community before it is made widely available to the public. Each participant will receive a summary of the results. There will also be small meetings in the community and these will be announced. Following the meetings, we will then share the results with the county authorities and the ministry so that other interested people may learn from the research.

Right to Refuse or Withdraw: You do not have to take part in this research if you do not wish to do so, and choosing to participate will not affect you in any way. You may stop participating at any time that you wish without you being affected. I will give you an opportunity at the end of the interview/discussion to review your remarks, and you can ask to modify or remove portions of it, if you do not agree with my notes or if I did not understand you correctly.

Who to Contact: If you have any questions, you can ask them now or later. If you wish to ask questions later, you may contact me or any of the following: [Mr………………………….name, address/telephone number/e-mail].S/he is the County Health Director (CHD).
This proposal has been reviewed and approved by Directorate of Research at the MOH which is a committee whose task it is to make sure that research participants are protected from harm. If you wish to find out more about it you can contact Mr……………………………………………Name, Tel, Email……………………

Certificate of Consent:

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study
Print Name of Participant_______
Signature/ Thumb print of Participant: ____________________Date (Day/month/year). ______
Witness
I have witnessed the accurate reading of the consent form to the potential participant, who is my ………………………………………………………………. and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.
Print name of witness____________
Signature/ Thumb print of witness _____________Date (Day/month/year) _________________________

Statement by the researcher/person taking consent:

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands it well.
I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.A copy of this ICF has been provided to the participant.
Print Name of Researcher/person taking the consent________________________
Signature of Researcher /person taking the consent ______________ Date (Day/month/year)_______

C: Research Tables:

Table 4: Showing research objectives, issues, methodologies and category of participant

Overall objective: To explore factors influencing utilization of ANC services among women of reproductive age (15-49 years) in Kajo-keji County, Central Equatoria in order to generate information for use by service providers to improve uptake.			
Specific Objectives	**Issues**	**Methodology**	**Respondents**
1. To assess the level of knowledge and perceptions of women on ANC services	➢ Knowledge of; ➢ ANC services ➢ Importance of services ➢ when to start ANC ➢ Sources of information on ANC ➢ Desire to use attend ANC services ➢ Reasons for not attending ANC	➢ IDI ➢ FGD	➢ Women ➢ men ➢ Health workers ➢ Women leaders ➢ Religious leaders ➢ cultural leaders ➢ TBA
2. To describe the socio-demographic and sociocultural factors affecting ANC utilization	**Sociodemographic** ▪ Income level ▪ Employment status ▪ Education level ▪ Exposure to media ▪ Participation in BCC on ANC	➢ IDI ➢ FGD ➢ KII	➢ Women ➢ men ➢ Health workers ➢ Women leaders
	Sociocultural Partner support Family support Cultural/religious perceptions of pregnancy Influence of TBA Decision making power	IDI FGD KII	Women Men Women leaders Religious leaders TBA
3. To explore the factors related to accessibility of health services affecting ANC utilization	Cost of service Cost of transport Opening and closing time Physical barriers Distance from residence	❖ IDI ❖ FGD ❖ KII	❖ Women ❖ men ❖ Health workers ❖ Women leaders ❖ Religious leaders ❖ cultural leaders ❖ TBA
4. To explore the health system related barriers and facilitators of ANC utilization	• Availability of ANC services • Attitude of providers/ patient welcome • Perception of quality • Availability of trained health personnel • Waiting time • BCC for ANC • Interpersonal communication • Respect for women intimacy	➢ IDI ➢ FGD	• Women • Men • Health worker • Women leaders • Reproductive health officer
5. To propose recommendations to stakeholders and service providers to improve ANC services uptake			

D: Topic Guide: In-depth interviews:

Introduction: Welcome and thank you for volunteering to take part in this discussion. My name is Dr. ……………..a Master of Public Health Student from the Royal tropical Institute (KIT) Amsterdam. I am exploring the factors influencing utilization of ANC services in Kajo keji County as part of my study requirements. You have been asked to participate in the study because your point of view is important for the understanding of this subject. I recognize that you are busy and I appreciate your time.
The discussion will take no more than two hours. May I tape the discussion to facilitate its recollection? Despite being taped, the discussion will be anonymous. The tapes will be kept safely in a locked facility until they are transcribed word for word, then they will be destroyed. The transcribed notes will contain no information that would allow individual subjects to be linked to specific statements. You should try to answer and comment as accurately and truthfully as possible.. If there are any questions or discussions that you do not wish to answer or participate in, you do not have to do so; however please try to answer and be as involved as possible

A: personal Identification; Respondent number……………………..

Age	<18yrs		18-28yrs		29-38yrs		39-49yrs		>49yrs	
Sex	Male		female							
Highest level of Education attained	(Tick) right option	Primary	Secondary	Higher	No formal Education					
	completed									
	Not Completed									
Occupation										
Employment status	working /own business		Family business		Not working					
Marital status	Married		Divorced/separated		Widowed		Single			
Number of deliveries	Pregnant		1-3		4-6		=>7			
Pregnancy status										
Breastfeeding status										
Distance to nearest health facility										
Family size										
Religious affiliation										

B. To assess the level of knowledge and perceptions of women on ANC services

1. (a). Are you pregnant now? (i). Yes [ ] go to……… (a) (ii). No [ ]… go to (d)
   (b). If yes in (i), how many months are you pregnant? ……………………………………………….
   (c). Did you see any one for checkup in this pregnancy? Yes [ ] No [ ]
   (d). If no in (i) how long ago was your last pregnancy? ....
   (e). Did you see any one for checkup in that pregnancy? (i) Yes [ ]. (ii). No. [ ]. Probe for place
(i) Government hospital [ ]. (ii) Government PHCC/PHCU [ ]. (iii) Private clinic [ ]. (iv) TBA [ ]
   (f). Probe for importance of ANC if yes: If no probe for perceptions about ANC
   (g). what did you get when you visited the facility/ TBA? Probe for TT, IPT, Fe, BCC, herbal medicine

2. (i). Since you (had) have been pregnant, have you received any injection to protect your baby from tetanus (convulsion)?
(ii). How many injections did you receive? ....
3. What is the recommended period required for a pregnant woman to go for first ANC visit?
4. How many ANC visits is a pregnant mother expected to make during each pregnancy?

5. (i). Do you know of any reasons why pregnant women are encouraged to attend ANC? (ii). Probe for Reasons for early ANC visits……………………….
6. Have you ever got some information on ANC? Probe for the information
7. What is the source of your information? Probe for Mass media/ BCC during ANC/TBA, Friends/Mothers
8. (i). How many ANC visits do you intend to attend in your next pregnancy? (AND WHY?)

(ii). probe for importance of ANC to mother and unborn baby

(iii). probe for reasons for not attending ANC, Beliefs, affordability, acceptance of pregnant.

9. What in your opinion is the most important reason for attending/ not attending ANC in your next / current pregnancy?

C. Factors related to accessibility:

1. How far is the nearest health facility to you hear (KM)/ walking hours ……………………………….
2. (i). Do you pay for ANC services here? Yes. [ ] ….Go to ii, iii. No. [ ]…go to iv

(ii). If yes, how much do you pay?

(iii).Probe for payment of other services like gloves, cannula, Lab. Tests, drugs etc.

(iv) If no, probe for illegal payment, other services like drugs, gloves,

3. If you want to go to health facility, how do you get there?
   (a) Walking [ ] (b) Bicycle [ ] (c) Motor bike [ ] (d). Car [ ]
4. How much does it cost you to reach the health facility you normally attend ANC in?
5. Do you or any of your family members own; (a). Bicycle [ ] (b). Motor bike [ ] or (c). Car [ ]?
6. (i). When does the facility you normally attend (a). Open? …… (b). Closing? …

(ii). what is your opinion about this opening and closing time (probe for suggestions) ………

7. (i). on your way to the health facility you normally attend, are there some barriers/ obstacles that may sometimes prevent you from reaching the facility?

(ii). Probe for poor roads during rainy season, rivers flooding/ impassable, hills, no road access for vehicles, motor cycle

8. What is the single most reason that can prevent you from reaching the nearest health facility you normally attend?

D. To explore the health system related barriers to ANC utilization

1. What was the qualification of the person who attended to you during your last ANC visit? Tick

(i). Doctor [ ]. (ii). Midwife [ ]. (iii). Nurse [ ]. (iv). TBA [ ]. (v). others. [ ] specify………..

2. Where you happy that you were seen by this person? Why?/ why not?

3. How long did it take you before they attended to you?

(i). < 30 min [ ]. (ii).30-45 min [ ] (iii). 45-60 min [ ]. (iv). More than 1 hour [ ]

4. What is your general feeling about this time you took to be seen?

5. (i). How do you describe the kind of reception you got when you reached at the facility?

(ii). Why did/ didn't you like it?. Probe for Respect, interpersonal communication, privacy

6. a). If you are to rate the quality of service you received from 1 to 10, how many will you give?

(b). Why will you say so, what exactly happened that you like or didn't like? Probe for availability of essential drugs, illegal payment, Health Education given, Skills of person seen

7. Did you receive some BCC on ANC? Probe for BCC on BF, FP, PNC, Advantages of ANC

8. What in your opinion is the most dis/encouraging service you received during your visit?

E. To describe the socio-economic factors affecting ANC utilization

1. Since you were first married/ Got pregnant first time, did you ever work regularly to earn money other than on a farm or in a family business run by your family?. Yes [ ]. No [ ]
2. When you are sick or want to go for ANC and want some money, where do you get the money from? **Probe for Partner support, other family members, borrowing, sell of asset…**
3. (i). When you what to go to Health facility, how do you get there? **Probe for means of transport, cost of transport**

   (ii).How long does it normally take you to reach the health facility and come back? Probe for causes of delay, not being attended to early, waiting for transport, walking back

4. Do you listen to Radio/ TV every day? (i). Yes radio [ ], TV [ ]. (ii). No Radio [ ], TV [ ]
5. Do you own a radio? (a). Yes [ ] (b). No [ ]
6. Have you ever participated in a BCC for ANC
7. Have you ever during your last pregnancy wanted to go for ANC/Hospital but could not go?

Yes [ ]. No [ ]. If yes, Probe for Lack of money, lack of transport, busy at home,

8. Of the factors you stated above, which one has contributed much to you not visiting the facility?

F. To identify socio-cultural and religious barriers influencing uptake of ANC services

1. (a). Did your husband ever attend school? (i). Yes [ ] (ii). No [ ]

(b). If yes, what was the highest level of education he attended?

(i). None [ ]. (ii). Primary [ ]. (iii). Secondary [ ]. (iv). Above secondary [ ]

(c). Probe: cane he read a letter/ newspaper; easily, with difficulty, Not at all

2. What kind of work does your husband mainly do? (tick)

(i). Does not Work [ ]. (ii). Agriculture [ ]. (iii) Formal employment [ ]. (iv). Others.. Specify

3. What is the general belief here in your community when a person is pregnant?, probe for belief about attending ANC in first trimester, Hospital delivery/ home delivery
4. When you got pregnant, did you share the news with anyone part from your husband?

(i)Yes [ ]. (i). No [ ].

5. (i). What was the reaction of your husband when you told him you are pregnant?. Probe for partner support on ANC-

(ii). Did your husband ever tell you to go for ANC?

6. (a). How many members do you have in your family?. (i) 1-3 [ ]. (ii). 4-6 [ ]. (iii). 7 or more [ ].

(b). who normally help you with the family duties when you go for ANC?

7. (i). Apart from your husband, who else gave you advice on your pregnancy? Probe for influence of TBA, Religious leaders, spiritual leaders, mother, grandmother and other family members/ friends

(ii). Can you describe some of the advice they usually give?

8. If you are to describe the power of the people who usually decide if you should go for ANC in a diagram (Venn diagram) how much will you give each? (Draw Venn diagram)
9. Which of these members / persons do you take seriously? Why/ why not?

<u>END OF INTERVIEW</u>

Do you have any question regarding this interview or anything else we have discussed?

Thank you for participating. This has been a very successful discussion. Your opinions will be of value to the study. We hope you found the discussion interesting.

If there is anything you are unhappy with or wish to complain about, please contact me Dr……… (PI) or Mr………………………. He sits in the County Health Department.

E: Key Informant Interview Guide:

A. Respondent identification:
Respondent number: [For official use only] ……………………….
1. Age: ……………………………………………………………………
2. Are you: (please tick as necessary) [ ] Male [ ] Female
3. What is your professional background?
[ ] Midwife or Nurse Midwife
[ ] Nurse
[ ] Clinical officer
[ ] Medical officer
[ ] Other: (please specify) ___________________________________
4. How many years of experience have you had in this current job?
[ ] <1 Year [ ] 1-2 Years
[ ] 2-5 Years [ ] 5-10 Years
[ ] >10 Years
5. How many deliveries have you done in the last month (approximately)? _______________
6. Experience in Health Care (optional):
[ ] <1 Year [ ] 1-2 Years
[ ] 2-5 Years [ ] 5-10 Years
[ ] >10 Years

1. Pregnancy /breast feeding status--
2. Number of deliveries---
3. Marital status---
4. Family size---
5. Working distance to nearest health facility---
6. Religious affiliation---

Thank you for taking the time to complete this questionnaire
B. Key informant interview Guide:

Introduction: Welcome and thank you for volunteering to take part in this discussion. My name is Dr. ……………..a Master of Public Health Student from the Royal tropical Institute (KIT) Amsterdam. I am exploring the factors influencing utilization of ANC services in Kajo-Keji County as part of my study requirements. You have been asked to participate in the study because your point of view is important for the understanding of this subject. I recognize that you are busy and I appreciate your time.
The discussion will take no more than two hours. May I tape the discussion to facilitate its recollection?

Please fill the information sheet provided, circle or tick the most appropriate options.

Anonymity: Despite being taped, I would like to assure you that the discussion will be anonymous. The tapes will be kept safely in a locked facility until they are transcribed word for word, then they will be destroyed. The transcribed notes on the other hand will contain no information that would allow individual subjects to be linked to specific statements. You should try to answer and comment as accurately and truthfully as possible. I would appreciate it if you would refrain from discussing what we discuss here outside. If there are any questions or discussions that you do not wish to answer or participate in, you do not have to do so; however please try to answer and be as involved as possible.

Introductory question

I am going to give you a couple of minutes to think about your experience of providing care to pregnant women, in your work place or at home. Do you mind sharing with me your experience?

Guiding questions

1. What can you tell me about the ANC services in Kajo keji County?
2. Probe the positive/negative reaction? If negative, how can it be made better?
3. How often do you receive mothers below 18year attending ANC in your unit
4. Comparing mothers below 18 years and those above, what is your experience with regards to time of reporting for ANC, and number of visits?
5. What do you think about the quality of ANC services provided to pregnant women in Kajo keji County? (explore patient safety, patient privacy, waiting time, quality of/ number of staff, availability of necessary services, cost of services, health education, teamwork and communication)
6. What are your thoughts on the range of services offered? Is there anything that needs to be done to improve the quality of services?
7. What are the barriers to using the ANC?
8. What are the enablers?
9. Of these barriers / enablers you listed above, which are the two most important barriers/ enablers
10. Do you think there is a need for more training of the staff attending to pregnant mothers in Kajo keji? (If yes, explore who would need training (No names), and in which area?)
11. What in your opinion should be done to improve Utilization of ANC services in Kajo keji?
12. What would be the single most important change you would suggest to improve ANC services to women in Kajo keji?

Concluding question

Of all the things we have discussed today, what would you say are the most important factors you would like to express that particularly hinder the Utilization of ANC services in Kajo Keji?

<u>End of Discussion</u>

Thank you for participating. This has been a very successful discussion. Your opinions will be of value to the study. I hope you found the discussion interesting

If there is anything you are unhappy with or wish to complain about, please contact me Dr……… (PI) or Mr………………………. He sits in the county Health Department.

I would like to remind you that any comments that will feature in the report will be anonymous.

F: Focus Group Discussion Guide:

A. Respondent identification:
Respondent number: [For official use only] ……………………….
Please fill in the details in the spaces provided, circle or tick the most appropriate options.

Age	<18yrs		18-28yrs		29-38yrs		39-49yrs		>49yrs	
Sex	Male				female					
Highest level of Education attained	(Tick) right option	Primary			Secondary		Higher		No formal Education	
	completed									
	Not Completed									
Occupation										
Employment status	working /own business				Family business				Not working	
Marital status	Married		Divorced/separated				Widowed		Single	
Number of deliveries	Pregnant		1-3		4-6		=>7			
Pregnancy status										
Breastfeeding status										
Distance to nearest health facility										
Family size										
Religious affiliation										

Thank you for taking the time to complete this questionnaire

B. Focus Group Question Guide:

Introduction: Welcome and thank you for volunteering to take part in this focus group discussion (FGD). My name is Dr. ………………a Master of Public Health Student from the Royal tropical Institute (KIT) Amsterdam. I am exploring the factors influencing utilization of ANC services in Kajo keji County as part of my study requirements. You have been asked to participate in the study because your point of view is important for the understanding of this subject. I recognize that you are busy and I appreciate your time.
The FGD will take no more than two hours. May I tape the discussion to facilitate its recollection?

Please fill the information sheet provided, circle or tick the most appropriate options.

Anonymity: Despite being taped, I would like to assure you that the discussion will be anonymous. The tapes will be kept safely in a locked facility until they are transcribed word for word, then they will be destroyed. The transcribed notes of the focus group will contain no information that would allow individual subjects to be linked to specific statements. You should try to answer and comment as accurately and truthfully as possible. I and the other focus group participants would appreciate it if you would refrain from discussing the comments of other group members outside the focus group. If there are any questions or discussions that you do not wish to answer or participate in, you do not have to do so; however please try to answer and be as involved as possible.

Ground rules

- The most important rule is that only one person speaks at a time.
- There is no right or wrong answers.
- Please do not hold side discussions during the season
- There is no particular order for speaking.
- When you have something to say, do not hesitate. The views of each of you is important
- You do not have to agree with the views of other people in the group
- Do you have any questions? Let us start

Warm up: First, I would like everyone to introduce him or herself. You can tell us your name?

Introductory question

I am going to give you a couple of minutes to think about your experience of receiving ANC during your last pregnancy. Is anyone happy to share his or her experience?

a. Factors associated with Access of ANC services

1. What important ANC services do pregnant mothers get in kajo keji country? (Probe: care, PMTCT, services, case management, transportation, TT……..)

2. Who are the main ANC service providers where pregnant mothers obtain services from? (Probe for Government Hospital, PHCC/ PHCU/, Private clinics, TBA, community-based organizations /NGO, Faith based agencies, mobile clinic services)

3. What ANC services or care do pregnant women need, but are unable to get? Probe: (transportation, coordinated appointment schedules, prescription drugs/medication, insurance coverage, benefits?)

4. What main concerns do you have about getting services or care in your next pregnancy?

b. Health system related factors

1. Are you satisfied with the particular ANC services provided in public health facilities (Hospital, PHCC, PHCU) in Kajo Keji County? (Prompt: medical care, case management, ambulance services, counseling (VCT), Why/why not? Probe:
2. If you are unable or do not want to go to the public facilities, which other options do you have?
3. Do you find satisfaction with the options you have for services like the private clinics? (Why or why not?
4. How do you feel about the location and hours of operation of the services you currently use? Probe: why not, what is reasonable? Probe for opening hours, privacy, space,
5. Are there instances when you have felt particularly welcome, comfortable, motivated when you went for ANC visit during your last pregnancy? Probe: (If examples are provided). Did you ever tell anyone about your experience?
6. Are there instances when you/ your wife have felt particularly unwelcome, uncomfortable, discriminated during ANC visit in your last pregnancy? Prompt: (If examples are provided)? Did you ever tell anyone about your experience? (If so, did they respond in a way that helped or made you feel better? Did they respond in a way that made you feel worse?). Did they share a similar experience with yours?
7. Which are the two most important reason that have encouraged/ discourage you/ your spouse from going for ANC visit again

c. Barriers

1. While seeking ANC services, have you ever experienced any problems in trying to get the services? Probe: (unhelpful attitudes, behaviors, travel a great distance to receive service, transportation problems, and inconvenient hours of operation, having to pay a fee for services, unmanageable waiting time to get an appointment or to see a provider once you are there, harassment by staff or other clients, language /cultural barriers)

2. If there was one thing you could change about ANC services for or one recommendation you could make to providers or those serving women — what would it be?

3. What is the general belief here in your community when a person is pregnant?, probe for belief about attending ANC in first trimester, Hospital delivery/ home deliver

4. When you / your wife get pregnant, who do you rely so much on for information about pregnancy, health of the baby? Probe- TBA, Mother, grandmother, Health worker

5. Did anything prevent you from getting ANC as early as you would want to?

6. What advice did your mother/ grandmother give you about pregnancy?

7. How would you describe the support you receive from home when you get pregnant?

8. What two most important things have helped/ prevented you/ your wife from attending ANC visit in your last/ current pregnancy

Conclusion Question

Is there anything else you would like to add? Are there any questions that I can answer before we end the session?

End of Discussion

Thank you for participating. This has been a very successful discussion. Your opinions will be of value to the study. We hope you found the discussion interesting

If there is anything you are unhappy with or wish to complain about, please contact me Dr……… (PI) or Mr………………………. He sits in the county Health Department.

I would like to remind you that any comments which will feature in the report will be anonymous. Before you leave, please hand in your completed personal details questionnaire

G: Map of Africa showing Republic of South Sudan

H: Royal Tropical Institute (KIT) Research Ethics Committee Approval Letter

KIT | Health

Contact
Meta Willems
Telephone +31 (0)20 568 514
m.willems@kit.nl

BY E-MAIL:
Samuel Rumbe
srumbe@gmail.com

Amsterdam 26 April, 2016

Subject Decision Research Ethics Committee on Proposal S 73

Dear Samuel Rumbe,

The Research Ethics of the Royal Tropical Institute (REC) has reviewed the revised proposal entitled "Factors influencing utilization of antenatal care services among women of reproductive age in Kajo keji County, Central Equatoria State, Republic of South Sudan (S 73)" that was re-submitted on April 18, 2016.

The decision of the Committee is as follows:

The Committee has reviewed the revised protocol and has taken note of your amendments and clarifications and is pleased to see that you have addressed our concerns and questions to our full statisfaction.

The Committee is of the opinion that the proposal meets the required ethical standards for research and herewith grants you ethical approval to implement the study as planned in the afore mentioned protocol.

Kind regards,

P. Baatsen,
Chair Research Ethics Committee, KIT

P.O. Box 95001
1090 HA Amsterdam
The Netherlands
Fax +31 (0)20 668 4579
www.kit.nl

I: Cover letter from Royal Tropical Institute (KIT):

KIT | Health

Contact Rinia Sahebdin
Telephone +31 (0)20 568 8256
r.sahebdin@kit.nl

KIT Health | P.O. Box 95001, 1090 HA Amsterdam, The Netherlands
The Chair Person,
Research Ethics Committee,
Directorate of Research,
Ministry of Health, Republic of South Sudan

Thru:
The Programme Director Master of Public Health,
Royal Tropical Institute (KIT),
Amsterdam the Netherlands
Date: 10th May 2016

May 11, 2016

Subject: REQUEST FOR ETHICAL APPROVAL FOR THE STUDY;
"FACTORS INFLUENCING UTILISATION OF ANTENATAL CARE SERVICES AMONG WOMEN OF REPRODUCTIVE AGE IN KAJO KEJI COUNTY, CENTRAL EQUATORIA STATE REPUBLIC OF SOUTH SUDAN; A QUALITATIVE STUDY".

Dear Sir,

I am a South Sudanese national, a beneficiary of the South Sudan Health Action and Research Project (SHARP) for the study leading to the award of the Master of Public Health/ International Course In Health Development (MPH/ICHD) of the Royal Tropical Institute (KIT), Amsterdam, the Netherlands. As a partial requirement for the award of the MPH/ICHD, I am required to write a thesis. I now request your approval to enable me carry out my data collection.
The study proposal has been reviewed and approved by the Research Ethics Committee (REC) of the Royal Tropical Institute (REC KIT). Please find attached approval of REC of KIT and introductory letter from SHARP. Also attached are detailed research proposal, filled Ministry of health research ethics submission form and my updated curriculum vitae.
The study will be conducted in Kajo Keji county, Kangapo II payam in particular. It is expected to commence on 20th June 2016 through July 5th 2016.
Do not hesitate to contact me on the address below or my thesis advisor Dr. Maryse Kok at (Maryse.kok@kit.nl) if you have any questions on the subject.

Sincerely,

Dr. RUMBE Samuel Loboka
E-mail: srumbe@gmail.com
Skype: Rumbe.sam
Tel: +31626657457/ +211954447746

Prisca Zwanikken MD MScCH PhD
Program Director MPH/ICHD
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Development Policy and Practice
P.O. Box 95001
1090 HA Amsterdam
The Netherlands

Royal Tropical Institute

J: Cover Letter from South Sudan Health Action and Research Project (SHARP):

5 May 2016

RE: Research submission for: *Factors influencing utilization of antenatal care services among women of reproductive age in Kajo Keji County, Central Equatoria State, Republic of South Sudan; A qualitative study*.

Dear Dr. Richard Laku,

Please find the attached Ministry of Health Research Submission Form and supporting documents for the study: "Factors influencing utilization of antenatal care services among women of reproductive age in Kajo Keji County, Central Equatoria State, Republic of South Sudan; A qualitative study".

This study is proposed to be conducted under the South Sudan Health Action and Research Project (SHARP), funded by the Ministry of Foreign Affairs of the Netherlands. The principal investigator is Samuel Rumbe, student at the Royal Tropical Institute (KIT). He is one of the recipients of the SHARP scholarship and hopes to finish his Masters of Public Health with this study. Mr Rumbe is supervised by Dr Maryse Kok and Dr Egbert Sondorp, both coordinators of SHARP. We hope to begin the study End June 2016. Below is a list of the supporting documents attached:

1. Research Submission Form
2. Detailed Project Protocol
3. Ethical approval KIT
4. CV of Samuel Rumbe

If you have any questions you may contact Samuel Rumbe at srumbe@gmail.com or Maryse Kok at maryse.kok@kit.nl

Sincerely,

Dr Maryse Kok
Coordinator
SHARP Consortium

K: Ministry of Health Republic of South Sudan Research Approval Letter:

The Republic of South Sudan

Ministry of Health

22nd June 2016

TO: Dr. Rumbe Samuel
Royal Tropical Institute (KIT) Health
Amsterdam the Netherlands

RESEARCH APPROVAL LETTER

Dear Dr. Rumbe

SUBJECT: **FACTORS INFLUENCING UTILIZATION OF ANTENTAL CARE SERVICES AMONG WOMEN OF REPRODUCTIVE AGE IN KAJOKEJI COUNTY, CENTRAL EQUATORIA STATE REPUBLIC OF SOUTH SUDAN**

I am writing in response to the request for authorization for the study on **"Factors influencing utilization of antenatal care services among women of reproductive age in kajokeji county, central equatoria state republic of South Sudan**

After close review of the proposal, I am glad to inform you that the ethnical committee at the Ministry of Health for the Republic of South Sudan has approved the study. The Ministry acknowledges the importance of getting baseline information aimed at providing evidence-based information on utilization of ANC services, in improving management of Reproductive Health issue in South Sudan.

Please, keep the Ministry informed in case of any changes regarding the study and on its progress. I look forward to the report, especially the recommendations that will be generated from the study.

Note that any information generated from the study should not be published without the consent of the Ministry of Health Republic of South Sudan

Good luck and don't heisted to get in touch should there be any queries.
Yours Sincerely

Dr. Richard Laku Lino
Director General of Policy planning, budgeting and Research
Ministry of Health, Republic of South Sudan -Juba

CC: Undersecretary –MOH-RSS
CC: Director General, Preventive Health services –MOH-RSS
Cc: Director General State Ministry of Health

Headquarters, Ministerial Complex. Juba, Suoth Sudan- P.O.Box 88, Juba
Tel: +211 (0) 177 800 281 / +211 (0) 177 800 278

L: Permission to Conduct Study Request Letter:

Royal Tropical Institute (KIT) Health
Amsterdam the Netherlands

<u>30th June 2016</u>

To;
The Payam Administrator
Kakapo II Payam
Kajo-keji County

Thru;
The County Health Director
Kajo-keji County

SUBJ: **REQUEST TO CONDUCT A STUDY IN KANGAPO II PAYAM KAJO-KEJI COUNTY**

I write to seek your permission to conduct a study on, **"Factors influencing utilization of antenatal care services (ANC) among women of reproductive age in Kajo-keji county, central equatorial state Republic of South Sudan".**

I am a Master of Public Health (MPH) Student from the Royal Tropical Institute (KIT) Health in the Netherlands. This study is part of the requirement for the ward of Master of Public Health degree.
The study will involve women and men of reproductive age, health workers, traditional leaders and religious leaders. It will be conducted in Kangapo II payam, Kajo-keji County.

Find attached, a **Research Approval Letter** from the Ministry of Health, Republic of South Sudan

Yours sincerely,

Dr. RUMBE Samuel Loboka
Tel: 0954447746
E-mail: srumbe@gmail.com

FOR CMO CHD
Approve for assistance in your offices