Improving willingness to pay and utilization of maternal neonatal and child health services by empowering women groups participating in voluntary savings and loans schemes in Gombe state Nigeria

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A Dissertation Submitted in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy in Public Health
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ผลของการเสริมสร้างความเข้มแข็งของกลุ่มสตรีที่เข้าร่วมระบบการยืมและฝากแบบสมัครใจต่อความเต็มใจที่จะจ่ายและการใช้บริการสุขภาพแม่และเด็กในรัฐกอมเบ ประเทศไนจีเรีย

นายมูฮัมเหม็ด บาเชอร์ ยายา

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มูฮัมเหม็ด บาเชอร์ ยายา :

ผลของการเสริมสร้างความเข้มแข็งของกลุ่มสตรีที่เข้าร่วมระบบการยืมและฝากแบบสมัครใจต่อความเต็มใจที่จะจ่ายและการใช้บริการสุขภาพแม่และเด็กในรัฐกอมเบ ประเทศไนจีเรีย. (Improving willingness to pay and utilization of maternal neonatal and child health services by empowering women groups participating in voluntary savings and loans schemes in Gombe state Nigeria) อ.ที่ปรึกษาหลัก : อ. ดร.เทพนาฏ พุ่มไพบูลย์

รัฐกอมเบตั้งอยู่ทางตะวันออกเฉียงเหนือของประเทศไนจีเรียเป็นรัฐที่มีอัตราการตายของแม่และเด็กแรกเกิดสูงที่สุดในโลก ประชากรร้อยละ 72.2 มีฐานะยากจนและสตรีในหมู่บ้านต่างๆ ขาดสิ่งจำเป็นในการดำรงชีพและต้องพึ่งพาสามี ด้วยเหตุนี้การเพิ่มขีดความสามารถให้สตรีโดยการตั้งกลุ่มออมเงินร่วมกับการให้การศึกษาทั่วไป การให้ความรู้เรื่องสุขภาพของแม่และการฝึกอาชีพ จะสามารถเพิ่มอำนาจทางการเงินและการใช้บริการสุขภาพที่จำเป็นของสตรีเหล่านี้ ด้วยเหตุนี้จึงทำการศึกษาแบบกึ่งทดลองโดยมีจำนวนตัวอย่างในกลุ่มทดลองและกลุ่มควบคุมไม่เท่ากันในสองพื้นที่เขตปกครองท้องถิ่นและทำการเก็บข้อมูลเชิงปริมาณและเชิงคุณภาพก่อนและหลังจากการให้โปรแกรม 6 เดือน การวัดความเต็มใจจ่ายใช้เทคนิคการใช้การต่อรองหลายครั้ง ตัววัดผลหลัก คือ ความเต็มใจจ่ายและการใช้บริการฝากครรภ์ การคลอด และการดูแลหลังคลอดในสถานบริการสาธารณสุข นอกจากนั้นยังวิเคราะห์ความสัมพันธ์ของข้อมูลทั่วไปของสตรีกับความเต็มใจจ่ายและการใช้บริการดังกล่าวด้วย ผลการศึกษาพบว่ามีการเปลี่ยนแปลงอย่างมีนัยสำคัญทางสถิติของรายได้ ($z=-6.983$, $p<0.001$) ความเต็มใจจ่ายบริการคลอด ($z=-2.623$, $p=0.009$) และบริการดูแลหลังคลอด ($z=-2.465$, $p=0.014$) พบความสัมพันธ์ระหว่างความเต็มใจจ่ายบริการทั้งสามลักษณะกับรายได้ การตัดสินใจด้วยตนเองหรือร่วมกับสามีในการใช้บริการการดูแลสุขภาพของแม่ ศาสนา ความสามารถในการอ่านเขียนภาษาท้องถิ่น พบความสัมพันธ์ระหว่างการใช้บริการการดูแลสุขภาพของแม่กับอายุ การตั้งครรภ์ในปัจจุบัน การตัดสินใจในการใช้บริการสุขภาพและราคาค่าบริการการคลอดและการดูแลหลังคลอด จากการอภิปรายกลุ่ม พบว่ากลุ่มสตรีมีความเข้าใจเรื่องของการเพิ่มขีดความสามารถโดยอาศัยองค์ประกอบของการเพิ่มอำนาจทางการเงิน ความรู้ทั่วไปและความสามารถในการตัดสินใจด้วยตนเอง ความเต็มใจจ่ายบริการดูแลสุขภาพของแม่นั้นสัมพันธ์กับการมีรายได้สูงขึ้น มีอิสระในการตัดสินใจใช้บริการสุขภาพที่ต้องการ ดังนั้นรัฐบาลจึงจำเป็นต้องสำรวจความเป็นไปได้ในการช่วยเพิ่มจำนวนกลุ่มออมเงินให้กับสตรีโดยเฉพาะอย่างยิ่งในเขตชนบท ซึ่งสตรีไม่มีความสามารถและความเต็มใจในการเข้าใช้บริการสุขภาพ

สาขาวิชา	สาธารณสุขศาสตร์	ลายมือชื่อนิสิต .....
ปีการศึกษา	2561	ลายมือชื่อ อ.ที่ปรึกษาหลัก .....

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KEYWORD: Empowerment, Willingness to pay, Women saving groups, maternal health services, Nigeria

Muhammad Basheer Yahya : Improving willingness to pay and utilization of maternal neonatal and child health services by empowering women groups participating in voluntary savings and loans schemes in Gombe state Nigeria. Advisor: Tepanata Pumpaibool, Ph.D.

Gombe State in North Eastern Nigeria is one of the states in the region that records the highest maternal and newborn death rates in the world. Poverty incidence is 72.2% in the state and a great deal of women in the villages don't have tangible means of livelihood and heavily rely on their husbands. Empowering these women through formation of women groups saving schemes, literacy, maternal health and vocational training, will improve their economic power and enhance their utilization of these vital maternal services. The study was a quasi-experimental one with non-equivalent experimental and comparison groups. Data for this study were collected using quantitative and qualitative methods through household survey and focus group discussions (FDGs) in two purposively selected intervention Local Government Areas (LGAs) of the state at baseline and 6 months after intervention. Iterative bidding technique was employed to determine the women's willingness to pay. The main outcome variables are willingness to pay (WTP) and utilization of antenatal care (ANC), facility delivery and post-natal care (PNC) of the women. An association between women's characteristics and their WTP and utilization of maternal health care services was analysed. The findings show statistically significant changes in the income ($z=-6.983$, $p < 0.001$) and the willingness to pay for delivery ($z=-2.623$, $p = 0.009$) and PNC ($z =-2.465$, $p = 0.014$) services. The correlations between WTP and income with all the services were found. Decision of women independently or jointly with husbands on their health care, religion, ability to read and write local languages were factors found to be associated with WTP for maternal services. Utilization of maternal services was found to be associated with age, current pregnancy, decision on health care, and prices for ANC and PNC services. The FGDs revealed that the groups understand empowerment as a combination of economic power, literacy and ability to take decisions independently. Willingness to pay for maternal care is associated with higher income, autonomy in taking decision for health care needs. Empowering women economically and educationally has potential for improving their willingness to pay for maternal health care needs. Government needs to look at the feasibility of aiding the proliferation of women savings groups especially in rural areas, which are the abodes of women without the ability and willingness to access health care services.

Field of Study:	Public Health	Student's Signature .....
Academic Year:	2018	Advisor's Signature .....

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Muhammad Basheer Yahya

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LIST OF ABBREVIATIONS

ANC	Antenatal Care
BMGF	Bill and Melinda Gates Foundation
CVM	Contingent Valuation Method
FGD	Focus Group Discussion
FHI	Family Health International
HFW	Health Facility Workers
HDI	Human Development Index
HDR	Human Development Report
IDP	Internally Displaced Person
LGA	Local Government Authority
MDGs	Millennium Development Goals
MG	Mothers Group
MNCH	Maternal Newborn and Child Health
MMR	Maternal Mortality Rate
NDHS	National Demographic and Health Survey
NGO	Non-Governmental Organization
NHIS	National Health Insurance Scheme
PHC	Primary Health Care
PNC	Post Natal Care

SAQIP	Strengthening Accountability and Quality Improvement Project
SDGs	Sustainable Development Goals
SPHCDA	State Primary Health Care Development Agency
SBA	Skilled Birth Attendant
UNICEF	United Nations Children Fund
WDC	Ward Development committees
WHO	World Health Organization

CHAPTER I

INTRODUCTION

Background/Rationale

Women have pivotal roles to play in the traditional and cultural lives of African societies. They have greater burden in carrying pregnancies, childbirth, rearing children and ensuring their adequate parenting as well as balancing their social contracts with their husbands. These burdens exert economic and social pressure on women who do not have any tangible means of livelihood apart from heavily relying on their husbands for their upkeep. This is a reality especially in our rural communities in North Eastern Nigeria where a mixture of religion, culture and low literacy all combine to shape the image of women in this region. The consequence therefore, is a pool of women who cannot afford to cater for their needs including the uptake of basic health services for themselves and their children. This puts them at greater risk of maternal deaths from pregnancy related complications and deliveries attended to by unskilled personnel. Hence, it is not surprising that Gombe State in North Eastern Nigeria is one of the states in the region that records the highest maternal and newborn death rates in the world (Schellenberg & Avan, 2012)

The National Health Insurance Scheme, which is supposed to cover the general population, has very low coverage and mostly enjoyed by urban and more educated women. Less than 2% of women age 15-49 have health insurance in Nigeria and that covers employees in the formal sector (Macro & Commission, 2014). Women are therefore, left with no choice other than to use out of pocket expenses to pay for their health needs further depleting their meagre resources and plunging them into more impoverishment. The logical thing to do is to empower these women economically to be able to have the independence to cater for their own basic needs, which include the utilization and payment for their maternal, neonatal, and child health services.

A number of international donor organizations have supported some women groups in Northern Nigeria to improve access and utilization of maternal and child health services through some models of empowerment which include provision of matching grants, training on small income generating activities and facilitation of access to loans. Targeted States High Impact Project (USAID funded) supported the formation of 100 Women groups in Bauchi and Sokoto states with the aim of helping women to increase their voices and gain more control of local decisions within communities and in households. The groups later introduced internal savings and lending components within them enabling them to engage in trading activities.

Study Justification

The intervention for this study is within the context of an existing implementation project in Gombe state of Nigeria by PACT known as SAQIP (Strengthening accountability for Quality improvement Project) which is funded by Bill and Melinda Gates Foundation (BMGF). The state primary health care development Agency and its structures at the local Government levels will be supported to address the poor maternal and child health indicators in Gombe state as evidenced by high maternal and neonatal deaths.

One of the outcomes of the project is to empower women of childbearing age to be able to have access to financial resources to pay for maternal and child care services thereby increasing utilization of these services leading to reduced maternal and neonatal mortalities.

Women's groups, known as "Mothers Groups" comprising 25-30 women who were mostly poor, non-literate and without any income were formed across all the LGAs. These groups were given literacy lessons and also be mentored and trained on how to put their resources into a savings scheme. They will in turn be eligible to get loans to engage in income generating activities. At the end of the project, 320 women's groups must have been formed and a total of 8000 women reached and

empowered. This was based on an empowerment model known as “WORTH” which Pact had implemented in Myammar, Tanzania and Ukraine and it proved successful in Nepal (Cameron & Cameron, 2006)

This study built on this intervention and conducted a baseline survey of the women groups to determine their “willingness to pay” (WTP) for maternal and child health services and measured the same after 6 months of the intervention and made comparison. In the same vein, WTP for a control group of women not belonging to the Mothers Groups was also measured at baseline and after the intervention. The WTP for the two categories of women was compared to determine if there was a relationship between empowerment and improved WTP on the one hand and increased utilization of MNCH services as a result of empowerment on the other.

While the concept of economic empowerment has global acclaim, it may have different meanings and implications on MNCH for the different societies. Previous studies in the area of women empowerment in this part of the country are few and their focus was to improve the economic status of women. There was no attempt to look at the willingness of women to pay for maternal and child services or even understand what women perceive as empowerment.

Expected Benefit/Application

The study will be of benefit to policy makers, civil society organizations and Non-Governmental Organizations (NGOs) to understand better the local context of economic empowerment and its drivers to better plan for supportive and sustainable interventions.

Targeted empowerment strategies can be employed in addressing the barriers that prevent poor women from accessing and utilizing maternal and child health services, which lead to preventable maternal and neonatal deaths. This will help to address the poor maternal indicators in the region consequently contributing to the reduction of maternal and neonatal deaths.

The outcome of the study will empower and build the capacity of community health structures (Ward Development Committees) - which serve as liaison between the communities and public health facilities - to better tackle poverty alleviation through internal resource mobilization and development of local solutions.

Health Systems Gap

The formation of these voluntary savings (Mothers Groups) is the first of its kind in the North East region of Nigeria and Gombe state in particular. Literature on WTP for

these groups is not available, and the association between their empowerment through this model and improvement in utilization of MNCH services has therefore, not been established. This study however, will try to establish what local women understand by empowerment as well as their willingness to pay health services once empowered.

Research Gaps

Previous studies in the area of women empowerment in this part of the country are few and their focus was to improve the economic status of women. There was no attempt to look at the willingness of women to pay for maternal and child services or even understand what women perceive as empowerment.

Research objectives

General Objective

To evaluate the effect of empowerment of women through voluntary savings and loans scheme and the improvement in willingness to pay and the utilization of maternal and child health services especially among women groups of childbearing age.

Specific objectives

1. To understand the concept of economic empowerment from the perspective of women's groups in the local context
2. To determine the relationship between economic empowerment and the willingness to pay for maternal and child services

3. To determine whether empowerment of women will translate to motivation and improvement in the use of MNCH services for women in low-resource settings.
4. To explore the factors associated with women's willingness to pay and utilization of maternal services

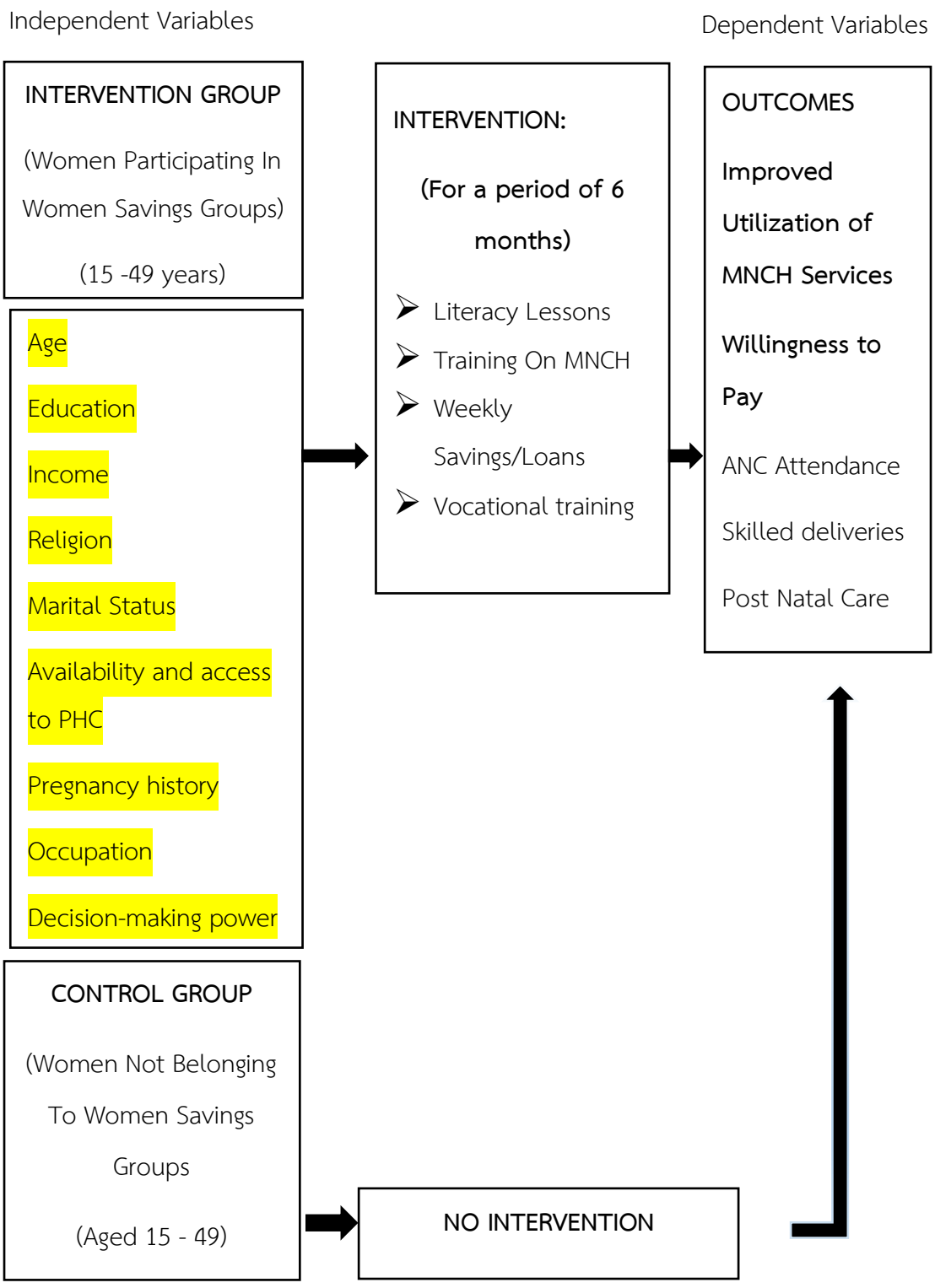
Research questions

1. What is the concept of economic empowerment for women groups in Gombe State and do they consider their personal savings and loans scheme as a form of empowerment?
2. What is the relationship between empowerment and willingness to pay?
3. What is the relationship between empowerment and utilization of maternal health services?
4. What are the factors associated with women's willingness to pay and utilization of maternal services?

Research Hypothesis:

Empowering women through group savings and access to loans will increase their ability and willingness to pay for MNCH services resulting in better utilization of MNCH services.

Conceptual Framework



Operational Definitions

Willingness to Pay (WTP) – The amount people are willing to pay in terms of money as an indication of their strength or preference for a good or service (health care)

Maximum Willingness to Pay – The maximum amount people are willing to pay in terms of money for a good or service

Ability to Pay (ATP) – Ability to pay in health care refers to the affordability of health care to families, which is dependent on social costs to the families like food and education that are forgone to pay for health care

Empowerment – Enhancing the capacity of poor people to influence the state institutions that affect their lives by strengthening their participation in political process and local decision-making.

CHAPTER II

LITERATURE REVIEW

Theory and Concept of Women Empowerment

Women over the centuries have been subjected to different forms of discrimination in different societies of the world. This has stripped them of some basic social and economic rights pushing them to the backstage bereft of voice and economic power to function independently. This reality gave birth to the concept of women empowerment, which seeks to advance the course of these disadvantaged groups to have the power to access resources and make decisions on issues that affect their well-being.

The use of the term “empowerment” formally found its way into the literature of researchers and social service providers in the 1970s in research and interventions concerning such groups as Afro Americans, women, gays, lesbians and people with disabilities that suffer from different forms of marginalization.

Empowerment has several definitions depending on the focus and context within which the term is used. This study focused on the public health and economic implications of empowering women and not from the lenses of gender discrimination and political relevance.

Farlex Medical dictionary defines empowerment as:

1. “Investing power in another person or group by sharing leadership roles or helping others to engage fully in a process”.

1. “Participating actively and autonomously in policies or events that affect one’s health or well-being” (; Farlex, 2009)

The World Bank in its “World Development Report” of 2000/2001 aptly describes the meaning of empowerment as “enhancing the capacity of poor people to influence the state institutions that affect their lives by strengthening their participation in political process and local decision making” and in the same report considers “voicelessness” and “powerlessness” as important attributes of poverty.

Women empowerment remains a central focus of UNDP in its drive to achieve MDGs/SDGs and considers it as a human right. Nigeria ranks 151 on the global human development index (HDI) out of 187 (UNDP HDR 2014). This underscores the need and relevance of strategic empowerment interventions that will eventually improve the quality of women in Nigeria. These interventions will be more relevant in NE states of Nigeria that are currently grappling with insurgency and poverty further worsening the situations of women and children, a great deal of whom are languishing in IDP camps across the region.

Poverty, Women Empowerment and Utilization of Maternal Health Services

Women empowerment has been found to be a factor in increasing access to ANC and delivery under skilled providers as well as decreasing infant, child and under 5 mortality in Nigeria (NDHS 2013). In the same vein, ability to take decision independently which is a vital component and indicator of empowerment is found to be low among married women as only 6% of currently married women make decisions on their health care (NDHS 2013)

Governments and international NGOs in low-income countries have put a number of measures in place to address the barriers militating against the use of health care services. These include increasing the number of health care workers; organizing emergency transport schemes to convey pregnant women in labour to health facilities and improving health education. In spite of all these, utilization of health services remains low.

Although findings linking utilization of health care services and empowerment in low-income settings are limited and not very consistent, a recent study carried out in Liberia has found out that there is a strong association between health care utilization and empowerment among women in Liberia.

Other studies established a link between empowerment of women and utilization of maternal health services in the African setting. In a recent report to analyze the 2011 Ethiopia National Demographic and Health Survey, indicators of women empowerment like household decision-making, general knowledge and awareness were found to be positively associated with contraceptive use. (Farlex, 2009; Tadesse, Teklie, Yazew, & Gebreselassie, 2013)

Role of saving groups in women empowerment – prospects and challenges

Saving by community members is an old and long tradition of Nigerians across the regions. It is known as “adashe” in the Northern part of the country, and “asusu” or “esusu” in the southern part of Nigeria. The purposes for engaging in these savings schemes differ from one individual to the other. However, one thing that remains true is the fact that it is a way of pulling resources to cater for the basic needs of livelihood especially among low-income groups, poor and disadvantaged groups and rural dwellers. The community members have no form of social insurance that covers and absorbs their risks and therefore consider it as a convenient way of reducing the burden of catastrophic out-of-pocket expenses when emergencies happen.

The benefits of savings schemes vary from society to society and a number of factors determine their success or otherwise. In a typical rural setting, literacy and employment are serious challenges especially for the women folk. The idea of group savings with literacy-led approach will impart basic knowledge for the women in reading and writing as well as important health issues affecting them. This will increase their awareness and coupled with the loans they access and the small profits they make, they will be gingered to utilize more of maternal and child health services.

Savings by women as groups has the prospect of forming village banks which are generally managed by the communities to engage in weekly savings and give out credit to members to engage in small income generating activities. These banks as they grow in the communities have the potential to improve the economic power of the women and their power to make decisions in their households. Village banks were pioneered in the 1980s by a non-profit organization in the United States known as Foundation for International Community Assistance (FINCA). (Tadesse et al., 2013)

An important prospect for women saving groups will be to organize vocational training in areas like processing of agriculture produce, tailoring and similar activities with a view to creating sustainable income for them. In India, women under the umbrella of "self-employed women Association" (SEWA) whose main objective is to empower women in the informal sector get employed and achieve self-reliance and supported by the World Bank in getting micro-credit is a good case study. (World Bank Institute, World Bank, 2004)

The start-up of saving groups can equally encounter some challenges in rural communities. Since most of the women are poor without any stable income, they rely on their husbands for their upkeep and basic needs. This will make it difficult for the very poor to source the weekly funds for savings as no form of support in terms of subsidies or matching funds will be provided to them.

Equally, significant factor is the cultural norms of some of the communities, which make it near impossible for the women to be independent. Husbands have the final say in most issues and they make most vital decisions, therefore they may see women's involvement in decision making as an invasion of their authority over the wives. Mother in-laws have sweeping powers in determining what women do in a traditional setting. They can influence when a wife can attend health facilities and in some instances prevent her from going to a health facility to deliver under skilled birth attendants.

Violent conflicts and insurgencies affect mostly women and displace them from their communities and they settle at IDP and refugee camps. This gives rise to a catalogue of problems like spread of communicable diseases, gender violence and psychological instability for the women. Little or no meaningful empowerment activities may be possible in these kinds of environments.

Absence of proper mentorship within the communities for the women saving groups can also be a challenge in making sure that the groups remain cohesive and well

organized. The role of civil society organizations can be of great benefit in communities where they operate to help in facilitating the groups' activities.

Gombe State - Context and Barriers to utilization of health services

Gombe State is one of the 36 states of the federal republic of Nigeria, located in the Centre of the northeastern part of the country. It lies on latitude 9"30' and 12"30'N, Longitude 8"5'and 11"45'E. It is bordering Borno, Yobe, Adamawa, Taraba, and Bauchi states, with a land area of 20,265 Sq.km. The State has a population of 2,587,159 of which 50.1% (1,296,166) is male while 49.9% (1,290,993) is female and has a population growth of 3.2% annually. (National Population Commission, 2006), and the vegetation is guinea-savannah grassland. Gombe has two distinct climates, the dry season (November–March) and the rainy season (April–October) with an average rainfall of 850mm. The state has 11 Local Government Areas (LGAs) and 114 political wards. (Gombe State Ministry of Health, 2010)

In terms of the health sector, Gombe state has one tertiary health centre (Federal Teaching Hospital), one specialist and 18 general hospitals and 547 primary health care centres. Quite a number of multilateral, bilateral and international NGOs contribute to health care delivery in the state. These include UNICEF, WHO, the World Bank, DFID and USAID. Others include the Bill and Melinda Gates Foundation, Family Health International, PACT, SFH and IDEAS project of the London School of Hygiene and Tropical Medicine (LSHTM).

The budgetary allocation for health in the state stands at 2.1% of the total budget for the state, which is grossly inadequate for the effective delivery of health care in the state. Considering the poor maternal and child indicators, the Gombe State

Strategic Health Development Plan (GSSHDP) for 2010 – 2015 had identified priority intervention areas to focus attention on. Maternal, perinatal and under five mortality will be addressed and reduced through implementing high impact public health interventions including the use of LLINs, IPT, scaling up obstetric services, improved immunization and treatment of childhood illnesses. (Gombe State Ministry of Health, 2010)

The Gombe State Strategic Health Development Plan 2010 -2015 identified some health system challenges, which contribute to the poor health indices and focused attention on designing appropriate interventions. The human resources for health are not sufficient for the available health facilities in the state and the population. Distribution of skilled health personnel is therefore inequitable with their concentration mainly in urban facilities.

Poverty incidence in the state is very high at 72.2% according to the NDHS 2013. This coupled with the high out-of-pocket expenditures, as the NHIS scheme does not cover majority of citizens in the state.

The state currently enjoys support from donor organizations to improve health systems and increase utilization of essential health services especially maternal and child health. BMGF supports the state through funding to SFH, IDEAS, Pact, MamaYe to specifically improve maternal and child health. Pact handles the component of livelihood through a literacy-led empowerment model known as “WORTH” which it

tested in Nepal with a huge degree of success. Pact is implementing this model with the support of the state primary health care agency through one of Pact's project known as support to quality improvement project (SAQIP).

This literacy-led approach was implemented through sub-grants to some civil society organizations in the state to form and manage the women groups. The main objective was to reach as many as 8000 women with the intervention, which involved formation of women groups, voluntary savings and training on literacy and numeracy skills. These groups would spearhead the formation of other groups with the establishment of village banks from their savings thereby, building a social capital for the poorest women in the society from which they will access funds for their basic health needs.

Table 1 Gombe State Population and some health indicators

GOMBE STATE POPULATION (2006 CENSUS)	2,365,040
Female	1,112,0812
Male	1,244,228
Children under 5 years (20% of the population)	460,489
Adolescents (10-25years)	755,522
Women of child bearing age (15-49 years)	422,644
	NDHS 2008

Table 1 continues

INDICATORS	7.4%
Use of Family Planning Modern methods by married women (15-49)	5%
Antenatal Care Provided by skilled Health worker	45%
Skilled attendance at births	18%
Delivery in Health Facility	17%
Children (12-23 months) with full immunization coverage	16%
Children (12-23 months) with no immunization	26%
Stunting in Children under 5	52%
ITN utilization (Children)	12%
ITN utilization (Pregnant women)	15%
Pregnant women receiving IPT	4%

Source: Gombe State Strategic Health Development Plan 2010 – 2015

Figure 1: Map of Nigeria showing Gombe State - Study State

Source: National Population Commission, 2006 Population and Housing Census. 2010

Table 2: Population of Gombe State by Sex, State, LGA and Senatorial District

S/No.	LGA	Senatorial District	Land size klm^2	Male	Female	Both sexes
1	Akko	A	2705.966	177515	159920	337435
2	Balanga	B	1670.886	108494	102996	211490
3	Billiri	B	757.449	103201	99479	202680
4	Dukku	C	3948.886	107583	100075	207658
5	Funakaye	C	1463.021	132054	105633	237687

Table 2 continues

6	Gombe	C	53.434	146721	120123	266844
7	Kaltungo	B	905.88	80177	80215	160392
8	Kwami	C	1844.865	99778	94217	193995
9	Nafada	C	1643.72	79009	61176	140185
10	Shongom	B	946.828	76450	74498	150948
11	Yamaltu Deba	A	2041.099	133246	122480	255726
	GOMBE STATE		17,982,034	1,244,228	1,120,812	2,365,040

A = Gombe Central; B = Gombe South; C = Gombe North

Source: National Population Commission, 2006 Population and Housing Census. 2010

Figure 2: Map of Gombe State showing the 11 LGAs

Source: National Population Commission, 2006 Population and Housing Census. 2010

In order to address the high maternal deaths and low utilization of maternal health services in Gombe state, the barriers identified have to be addressed through policy formulations and proper coordination between all relevant stakeholders.

Low use of family planning services in the state where averagely women give birth to seven children is a source of concern. Family planning methods have been found to reduce by one-third maternal deaths but the rate of utilization of modern FP

methods in Gombe is only 5.3% below the national average of 9.7%. Health workers were not trained on family planning procedures to administer them at the family planning clinics. (Gombe State Nigeria, FHI 360, 2012)

Although ANC attendance is 45% in the state, the corresponding births attended to by skilled personnel and delivery at health facilities remain low (18% and 17% respectively). The associated challenges include transport costs, distance to the facilities, inability to pay for the cost of medication and in some cases cultural inhibitions. All these factors contribute to the current state of poor health indices in the state.

Willingness to Pay and Empowerment

In the field of health economics, there are different approaches to monetary valuation of health outcomes. Generally, three approaches are employed in this type of valuation in today's world - human capital, revealed preferences and willingness to pay (stated preferences).

The human capital approach looks at the utilization of health care programmes as forms of investment in a person's human capital. The value of the investment can be quantified in terms of increased productivity of the individual in the market place.

It therefore considers the market wage rates of a healthy person's time and gives it monetary weight. (Drummond et al. 2005)

In the revealed preference approach, individual preferences regarding the value of increased or decreased health risks such as injury at work place are traded-off against decreased or increased income.

The WTP or stated preference method employs contingent valuation (CV) techniques to measure what the consumers are willing to pay for the commodities or programme benefits if they were to purchase them in the market. This approach is very important in the valuation of social goods such as health care programmes that are not in the market.

According to welfare economic theory, the benefit an individual derives from any service or intervention is the maximum the individual is willing to pay for the service or intervention. The sum of what each individual is willing to pay for these services or interventions is what constitutes their benefit to the society. (Silwal, 2003)

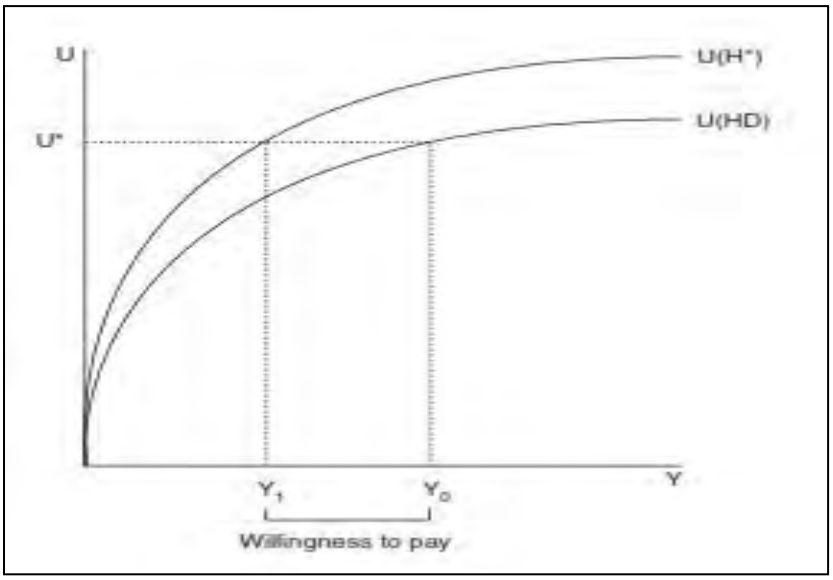


Figure 3 Curve explaining WTP during healthy and diseased conditions
Source: (Bala, Mauskopf, & Wood, 1999)

The concept of willingness to pay is clearly explained by the curves above which depict decrease in utility from a healthy status U(H*) to a diseased state U(HD) with a corresponding increase in income from Y_1 to Y_0. The difference between Y_1 and Y_0 is the maximum willingness to pay for the treatment by that individual. This exemplifies how much an individual is willing to pay for an improvement in health.

There are debates on whether ability to pay (ATP) is synonymous with WTP or not. Ability to pay (ATP) refers to the affordability of health care to families, which is dependent on social costs to the families like food and education that are forgone to pay for health care. This may not necessarily represent willingness to pay per se. (Ataguba, Ichoku, Fonta, Okpanachi, & Okon, 2006)

Contingent valuation methods (CVM) were initially developed to estimate environmental benefits but now popular and widely used for estimating willingness to pay for health care interventions. There is a debate about the appropriate choice of the technique in conducting CVM. However, face-to-face interviews with questionnaires remain the gold standard especially if the value of the health intervention is difficult to communicate.

There are many formats used in extracting information about WTP values using the CV survey method. These are known as elicitation methods, each method with its advantages and limitations. The most commonly used format is the open-ended questions without prompts from the interviewer. An example is asking the respondent what is the maximum he would be willing to pay to have the health care he values made available to him.

Another format is the iterative bidding format. The questions are designed to resemble an auction process and the respondent is presented with a first bid, which is either increased or lowered until his maximum WTP is reached. Some researchers see this as advantageous as it will capture the highest price that consumers are willing to pay. (Russell, 1996)

In this method, respondents are asked questions on three prices – current price of the service, a medium price increase and either a low price increase or a high price increase.

Payment scale or card is another elicitation format developed to serve as an alternative to the bidding format. In this format, respondents choose from a range of questions containing bid values for WTP written as a list on a card from the lowest to the highest incrementally. Respondents are asked to circle the maximum amount they will pay, put a tick mark on the amount they would pay and cross values they know they cannot pay.

Other formats equally used in CV surveys include close-ended/dichotomous choice where respondents are supposed to answer with a 'yes' or 'no' when the bid values are asked. This format was later to be re-structured into another method that includes a follow up question that is open-ended.

There are relevant studies that reported the use of contingent valuation method (CVM) in estimating willingness to pay for different aspects of health care interventions. Many were on WTP for health insurance while some were on maternal and other health services.

In a study of WTP for nursing consultations, it was found that socioeconomic and demographic characteristics of the subjects influenced the perception of the value of willingness to pay for the services. The CVM method of evaluation was found to be very useful in bringing out this perception. (Cummings, Brookshire, & Schulze, 1986)

In the African context, a study done in Burkina Faso to analyze the effect of sex difference in measuring WTP for improvement in maternal health also used the CVM

technique. The result of the study found a significant negative relationship between WTP and female sex while income of the sexes did not affect the valuation. (Ternent et al 2010)

(Martín-Fernández et al., 2013) used WTP methods in assessing the demand for prenatal diagnostic testing among women. They found that out that variations in WTP have correlation with socioeconomic and attitudinal differences in addition to age of the respondents, which is similar to what other studies have documented in WTP studies.

Even though a number of studies employed the CVM technique in estimating WTP for health services, the few studies on aspects of maternal health indicate the relevance of using WTP studies using CVM technique in the improvement of service utilization hence the choice of this method for this study.

CHAPTER III

RESEARCH METHODOLOGY

Research Design

The design of the study was quasi experimental with a non-equivalent control group where epidemiological project data from baseline and immediate post-intervention surveys were collected. The methodology was both quantitative and qualitative involving data collection on members of women's groups and non-members on willingness to pay and utilization of maternal health services, while structured interviews and Focus Group Discussions were employed on the qualitative side.

The design of the study built on a maternal health intervention for Gombe state through the support of Bill and Melinda Gates Foundation to address the high incidence of maternal mortality in through empowering women to increase the utilization of maternal health services. PACT Nigeria implemented these interventions through one of its projects called SAQIP (Support to Quality Improvement Project). Four Local Government Areas (LGAs) were selected for piloting these interventions based on some agreed criteria with the Gombe State Primary Health Care Development Agency (GSPHCDA). In the 4 LGAs only 50% of the political wards will be having these groups. This package of interventions is a combination of

empowerment through improvement in livelihood and basic training on maternal care and literacy. It had the following components:

1. Formation and management of women savings groups called “Mothers Groups”.

These groups comprised women of child bearing age (15 – 49 years) from village communities of these LGAs who are poor and not having any stable income. Each group had a minimum of 25 and a maximum of 30 members. Local civil society organizations were contracted to form and manage the activities of these groups. Each group chose a chairperson, secretary, treasurer that became the principal officers for the groups. They developed rules and regulations for the group; agreed on affordable amount to be contributed by each member weekly as mandatory saving. Members had the choice of contributing voluntary savings in addition to the mandatory one. Each member got a passbook where her weekly contributions were recorded. As the savings grew, each member was eligible to get a credit or small loan to start any income generating activity that would earn her profit. The loan was repaid over an agreed period and the profit shared with the group savings or a certain interest rate charged as agreed by all group members.

The Civil Society Organizations (CSOs) employed persons known as empowerment workers to mentor, supervise and support these groups in implementing their savings scheme.

2. Literacy training

Literacy lessons were also organized for the groups and set of materials made available as workbooks for them. The books were mostly to help them identify, read and write alphabets and simple numeracy skills. They would also teach them how to mobilize other women to form more groups and how to succeed in doing small businesses. All these were anchored by a female literacy volunteer teaching experience especially adult learning. Classes held twice or thrice weekly.

3. Maternal Health sensitization and training

As part of the intervention for the Mothers Groups, female health workers were recruited to give lessons to the group members on basic maternal health care issues. A manual was prepared in pictorial form with modules on care of the pregnancy, Antenatal care attendance, delivery in the facility as well as care of the new born. Other issues affecting the women were discussed during these sessions and the MNCH volunteer would give the appropriate guidance.

The overall concept of this set of interventions is that when women have access to funds to pay for their health care because of empowerment, and coupled with improved knowledge, the result will be increase in uptake of maternal services, which will reduce maternal mortality in the end.

4. Vocational Training

A fourth component of the intervention introduced in this study was training the women groups on vocational skills. The groups were asked to identify one or two items that they could produce and market in their communities to earn profit. Examples are making soap, perfumes or processing and selling farm produce. The idea was that the loans they secure from their savings the knowledge gained from this training would help them put the money in good use to make profit and grow their savings fund. An instructor from the social welfare unit of the LGA was identified to train these women after their literacy lessons at least twice in a month. Linkages were made to also help them identify other markets for the products they would make.

Table 3 Summary of interventions for the women saving group members

Intervention	Contents of training module	Frequency	Facilitator
Literacy Training	Our Group Selling made simple Road to wealth	2 times weekly	Literacy Volunteer (Tutor)
MNCH Training	Personal Hygiene Pregnancy signs, Nutrition, Malaria, Danger signs Antenatal care – Immunization, Birth Plan, Labour/Delivery Postpartum/care of newborn	Once weekly	MNCH volunteer (Health Worker)
Savings Scheme	Setting up savings scheme/election of officials Agreement on amount for mandatory saving for group members Conducting weekly savings sessions Filling and updating members savings passbooks Keeping members savings safe Process of loans/credit application and disbursement	Once weekly	Empowerment worker
Vocational Training	Identification of profitable trades in the community How to produce household products (soaps, perfumes, garments etc) Practical lessons How to market finished products	Twice monthly	Women's skill development tutor

This study did a baseline survey of these women groups immediately after their formation and end-line survey six months after the intervention. This was to assess their characteristics in terms of health seeking behaviour, willingness to pay for maternal health services and their utilization of these services. Measurement of WTP to pay for maternal health services by these groups was done at both baseline and six months after the intervention to detect changes. Similarly, women in other wards of the same LGAs that did not belong to such groups were also sampled as control and the same survey questionnaires administered to them.

IDEAS (Informed Decisions for Actions), a project of the London School of Hygiene and Tropical Medicine (LSHTM) had earlier done an evaluation on MNCH interventions funded by Bill and Melinda Gates Foundation in Gombe State. They carried out a population-level household survey to find out the coverage of critical interventions along the continuum of care from pregnancy to newborn.

This study involved the use of the following assessment methods:

a. Household survey

The household survey tools used by IDEAS project of the London School of Hygiene and Tropical Medicine for their household survey in Gombe state were adapted (Caughey, Washington, Gildengorin, & Kuppermann, 2004). Questions on willingness to pay for maternal services were also adapted from the Futures Group International WTP survey manual for the setting of prices of reproductive health products and

services (Marchant, 2013). We translated the questionnaires into the local Hausa language and pre-tested on women in Gombe LGA for validity and reliability. Thereafter, we administered them on the women saving groups members in the selected LGAs for this study.

b. Focus Group Discussion:

Focus Group Discussions (FGDs) were also conducted for the women belonging to the women's saving groups and women of child-bearing age within the same communities that did not belong to the women groups (control group) to obtain information on their perception of empowerment, what constituted barriers to their utilization of health services and their willingness to pay for these services. The FGDs were done in Gombe and Kaltungo LGAs, which were the intervention LGAs. The two LGAs are about 80 kilometres apart to avoid the probability of contamination. The FGD team comprised people from the community who had previous knowledge of conducting FGDS. The team got a refresher training on the process of conducting successful FGDs and comprised a moderator and a note taker.

The number of participants for the group discussion was ten women that were recruited from both groups (members of women saving groups and non-members).

We structured the discussion guide was to extract information from the women group members and non-members alike about their experiences with the use and frequency of uptake of the maternal health services, their perceptions about

women empowerment and willingness to pay for these services once empowered.

Study Area

The study area was the North Eastern state of Gombe, Nigeria. The choice of the state was based on the implementation of women groups in the state and its poor health indices, poverty exacerbated by the ongoing insurgency in the region further worsening the utilization of health services. Gombe (urban) and Kaltungo (rural/semi-urban) LGAs of the state were chosen for the study. Two political wards in each the two LGAs were selected and women groups members from each of the two political wards were enrolled for the study. One ward in each of the two LGAs was selected to serve as the control.

Study Period

The period of the study was for six months (July 2016 to January 2017) within which the baseline and post-intervention data on women groups and women not participating in the groups in control communities were collected and analyzed.

Study population

The population for this study was the Women Groups in Gombe state registered as “Mothers Groups” for participation in voluntary savings and loans schemes managed

and supported by the state, civil society organizations and Non-Governmental Organization (NGO) partners.

Sample and sample size

For the purpose of WTP estimation using Contingent Valuation Method, there is no standard formula for the calculation of the sample sizes. Some studies recommend the 400 as the minimum total sample size for WTP survey especially where groups are compared for statistical significance (Accent & Rand 2006). Previous research has found out that at least 600 samples and 400 samples are required each for single bound and double bound respectively in order to ensure the statistical reliability of WTP estimations (Foreit & Foreit, 2001). Considering the fact that the target population is the women groups and each group had between 25 – 30 members, and the two wards selected had five groups each, we estimated the sample size for one LGA to be 250. The sample size for the two selected LGAs was therefore 500. This was more than the 400 required but the additional 100 would cover for non-response or drop-outs during the survey. In the control wards, 125 women were sampled each based on the consideration that only 50% of the population was to be covered.

Sampling technique

Gombe state has eleven LGAs out of which five have registered women saving groups. We purposively selected two LGAs - Gombe (urban) and Kaltungo (rural/semi-urban) - for the study. There were security challenges in about seven of the eleven LGAs in the state bordering Borno and Yobe states where insurgency was still ongoing at the time of data collection. Our choice was therefore limited to four LGAs, which consisted of a mix of urban and rural characteristics of the women. Out of these two LGAs, we identified and documented the number of existing and registered women groups in the political wards of the LGAs. Gombe LGA had 30 registered Mothers Groups in six wards while Kaltungo LGA had thirty groups in five wards. Each ward had an average of five groups with minimum membership of 25 members.

Two political wards were randomly selected from each of the two LGAs and the women groups from each of the two wards were enrolled for this study. This gave a total of 500 members in the 2 study LGAs within the 4 sampled wards. One ward in each of the sampled LGAs without registered women groups for the intervention was randomly selected to serve as control. In each of the control wards, 125 women were sampled for the survey. These women were also of childbearing ages that did not belong to any women savings group but with similar demographic and socio-economic characteristics.

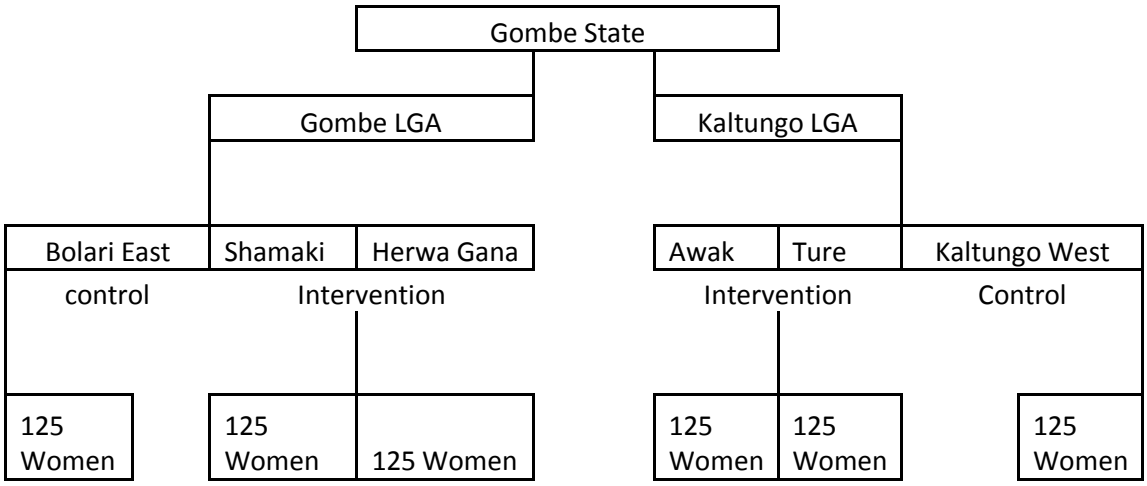


Figure 4 Flow chart for sampling of respondents

Data collection methods:

Review of existing women groups in the region:

Activities and strategies of other women groups available within the North East region were reviewed to underscore the impact of women empowerment in local settings. This was meant to help in understanding the local strategies employed by these women groups to mobilize resources for the uptake of antenatal care (ANC), skilled birth delivery at the facilities and post-natal care on a sustainable basis without recourse to internal or external support or use of out-of-pocket expenses. Emphasis for this study was more on ANC attendance, facility delivery under skilled personnel and post-natal care.

Literature review:

A review of literature was made on women groups in the NE sub-region where successes were recorded with a special focus on what strategies they employed in improving the economic status of their group members.

Qualitative data collection

Qualitative data were also collected through Focus group discussions conducted with members of the women's groups in 4 selected wards of the 2 Local Government Areas of the state and in-depth interview with the key stakeholders involved in managing and supporting these groups.

Quantitative data collection

The methodology involved quantitative data collected on health facility utilization during delivery, ANC attendance and socio-economic and demographic status of the women in the savings/loan groups as well as their willingness to pay for maternal health services before and after the intervention using questionnaires.

The survey team comprised two groups of five persons each drafted to the two study LGAs. Each team had one supervisor and four research assistants who had relevant experience in conducting household surveys. They were trained on the use of the questionnaire and the process of data entry was paper-based. The questionnaire contained questions on background and household characteristics of the women, their knowledge of vital maternal health issues, literacy and numeracy

skills and willingness to pay for maternal care. The supervisor led the other team members and assured quality of data collection and entry into the questionnaires.

Data were collected based on the filled questionnaires by the research assistants daily and submitted to the supervisor. The interviewer collected the information from the respondent, edited the questionnaire in the field and submitted his/her quota for the day to the supervisor. At the end of each day in the field, and after editing, the supervisors would check for double entries and errors before submitting the completed questionnaires.

The training of survey personnel was conducted for two days to familiarize them with the survey tools. The training among other things familiarized them with the location and list of Mothers Groups in the study LGAs as provided by the state.

A short training guide was prepared for the Interviewers and Supervisors with instructions on how to ask and record responses for each of the survey questionnaire items.

Inclusion and exclusion criteria

Inclusion criteria

Intervention Group

The eligibility criteria for inclusion into the study were:

1. Registered members of Mothers Groups in Gombe state participating in voluntary savings and loans scheme and willing to participate in the study.
2. Women were within the childbearing age group (15-49years).

Control Group

1. Women aged 15 – 49 years not belonging to any women savings group

Exclusion criteria

Exclusion criteria for participation in the study included:

Intervention Group

1. Women groups funded by other organizations apart from their voluntary savings
2. Women belonging to women groups other than Mothers groups living in the same communities as Mothers groups members
3. Women 15-49 who were gainfully employed with a regular income

Control Group

1. Women 15 – 49 years old but belonging to any savings group
2. Market women with already established businesses

Data Analysis

Quantitative data collected were analysed using IBM SPSS software v 22.0. Descriptive statistics (such as percentages, tables and graphs) were used. The findings were compared between the two groups. The estimates of WTP for the Mothers Group members at baseline (T1) and after intervention (T2) were compared. Equally, the same estimates for the non-members of the Mothers Group in the control wards were compared at T1 and T2. Comparison of WTP for the Mothers Group members at T1 and T2 was done using Wilcoxon Signed Ranks test detect any significant improvement in willingness to pay due to savings and loans scheme. Inter-group comparison of WTP was done between the Mothers Group and the control group at baseline and after intervention using Mann-Whitney U test.

We used Chi-square test and binary logistic regression analysis to identify the factors associated with willingness to pay and utilization of maternal health services due to the empowerment intervention. Multiple linear regression analysis with log transformation was used to find the factors associated with the maximum WTP for the maternal services. Chi-square was used to compare utilization of maternal services at baseline and endline.

Qualitative data from the FGDs were analysed using grouping of the most important key messages that came out of the discussions. These messages were perceptions of

empowerment by the group members and their barriers to accessing maternal services. Their willingness to pay for maternal health services after empowerment intervention was explored. Content analysis was employed to extract the most important themes from the discussions

Ethical considerations

This study was conducted in accordance with good clinical research practice. Government regulations and relevant research policies of the state and procedures were adhered to. Ethical clearance was obtained from the Gombe state Ministry of Health Ethical Research Committee prior to the commencement of the study. All eligible women that participated in the survey were provided with consent forms describing the study and providing sufficient information for them to make an informed decision about their participation.

The respondents and the designated study personnel obtaining the consent duly signed these consent forms. We submitted the copy of the consent form with the research protocol for review and approval by the ethical committee.

CHAPTER IV

RESULTS

This chapter presents an analysis of the findings and results of the research done on women affiliated to savings and loan groups to determine the effect of empowerment on their willingness to pay for maternal care and its utilization, with specific focus on antenatal care, delivery in the health facility and postnatal care. Focus group discussions with members of the women groups in the intervention and control wards were done to get their perception of what empowerment meant to them, their utilization of maternal services and possible barriers preventing them from accessing and utilizing these services.

Quantitative data on socio-economic and demographic characteristics of the women, their utilization of maternal services and their willingness to pay for antenatal care services, delivery services and postnatal care were collected and analysed at baseline, and six months after intervention. Since the methodology was both qualitative and quantitative, the results are presented in two sections.

Quantitative Analysis Results

The results from Table 4 shows the characteristics of the sample of women for this study at baseline.

Out of the 750 women sampled for the survey at baseline, 689 responded to the questionnaires giving a response rate of 93%.

Members of the women saving groups constituted 64% of the sample and majority of the respondents (85%) were married, 3% single and 12% widowed/divorced. Forty one percent (41%) of the women was within the age of 25 – 34 years with 33% between 15-24 years. The predominant religion of the respondents is Islam with 65% Muslims and 35% Christians.

Primary health care facilities were available nearby to 89% of the women with 11% of them without facility close to them. The major means of reaching the health facility for the women was by walking (82%), with a few of them using motor vehicles, bicycles and motor bikes.

History of previous pregnancy and current pregnancy among the respondents was significant as 80% reported that they had previous pregnancies. Twenty percent (20%) reported that they had never been pregnant.

The level of education between of the group in terms of ability to read and write English was low. Only 25% of the respondents could read or write in English with 75% without ability to read or write English. However, in terms of their ability to read or write in other languages - Hausa and Arabic – a little over half of the respondents (52%) had the ability to read or write in either Hausa or Arabic.

Decisions on money spending and health care utilization were largely dominated by the husbands more than by the respondents. The respondents took 35% of the decisions on money spending independently, while husbands also took 35% of decisions alone. Husbands and the respondents took joint decisions on money spending in 25% of cases.

In case of decision to utilize health care from the women, only 12% of respondents had the autonomy of taking decisions on their healthcare while their husbands took 42% of all health care decisions. Joint decisions between the respondents and their husbands were taken in 40% of cases pertaining to the women's healthcare. The husbands of the respondents took 42% of all health care decisions, with the husbands and respondents making decisions jointly in 40% of cases.

Majority of the women were unemployed (78%) with a small percentage (3%) reporting having any form of employment. Those with self-employment constituted less than 20% of the women.

The willingness to pay for the women for ANC was 60%, delivery services 55% and PNC was similar with ANC with 61% willingness to pay for PNC.

Monthly Income level for the majority of the respondents (62%) was less than or equals to one thousand Nigeria Naira (N1000.00). Only 3% of the respondents had a monthly income of between N5001.00 and N10, 000.00. Similarly, those with earnings above N10, 000.00 monthly constituted less than 4% of the sample.

Health facility utilization by the women was 78% in the six months preceding the survey with 22% of them not visiting any facility during the period. For the pregnant members of the sample, 36% had plans to deliver in the primary health care facility and another 34% planned to give birth in a secondary health facility or higher. Some of them indicated plans to deliver at home (13%) and 17% planned for other places as their birth centres.

Table 4 Characteristics of the sample for the study

Variable	No	(%)
Membership of savings group		
Yes	441	64.0
No	248	36.0
Marital Status		
Married	584	84.8
Single	24	3.5
Widowed/divorced	81	11.8
Age		
15-24 years	229	33.2
25-34 years	284	41.2
35-44 years	154	22.4
45-49 years	22	3.2
Religion		
Islam	448	65.0
Christianity	241	35.0

Table 4 continues

Variable	No	(%)
Availability of PHC		
Yes	611	88.7
No	78	11.3
Means of transport to PHC		
Walking	563	81.7
Bicycle	9	1.3
Motor Vehicle	41	6.0
Motor Bike	67	9.7
Donkeys/Horse Cart	9	1.3
Previous pregnancy		
Yes	551	80.0
No	138	20.0
Currently pregnant		
Yes	157	22.8
No	532	77.2
Ability to read or write in English		
Yes	173	25.1
No	516	74.9
Ability to read or write in other language		
Yes	360	52.2
No	329	47.8

Table 4 continues

Variable	No	(%)
Decision on money spending		
Respondent	240	34.8
Husband/Partner	242	35.1
Respondent and Husband/partner jointly	172	25.0
Others	35	5.1
Decision on Health Care		
Respondent	86	12.5
Husband/Partner	287	41.7
Respondent and Husband/partner jointly	276	40.0
Others	40	5.8
Occupation		
Employed	21	3.0
Self-employed	132	19.2
Unemployed	536	77.8
Willingness to pay for ANC		
Yes	412	59.8
No	277	40.2
Willingness to pay for Delivery		
Yes	379	55.0
No	310	45.0
Willingness to pay for PNC		
Yes	420	61.0
No	269	39.0

Table 4 continues

Variable	No	(%)
Monthly Income		
0-1000	424	61.5
5001-10000	22	3.2
Above 10000	24	3.5
Health Facility Utilization		
Yes	536	77.8
No	153	22.2
Birth place for this pregnancy (Pregnant members n =157)		
Home	21	13.4
PHC	56	35.7
Hospital (Secondary or higher level)	53	33.8
Other	27	17.1

We made a comparison of some characteristics of the women between intervention and control group at baseline in Table 5 below. We specifically identified characteristics that the intervention sought to improve at endline in addition to some of the demographic characteristics. Comparison was therefore based on age of the respondents, marital status and religion. Others were education, decisions on money spending and health care, WTP for the maternal services, health facility utilization and income.

There were significant differences in the age, marital status and religion of the respondents between the intervention and control groups at baseline (all having p-value <0.001). Married women constituted 91% of the intervention group while control group had 75% of married women. In the intervention group, almost half of the members were within 25 – 34 years in contrast with the control group, which had 63% of their members between the ages of 15 – 24 years. Islam and Christianity were the two predominant religions in the state.

Ability to read and write in English (p = 0.816) and decision to spend money (p = 0.075) were not found to be significantly different between intervention and control at baseline. In both groups, 25% of the respondents had the ability to read and write in English, while 75% of respondents in the two groups did not have that ability. In terms of decision to spend money, 35% of the women in intervention and control groups had the autonomy of spending their money without interference. However, husbands were the decision makers for both groups in more than 30% of cases, and joint decisions also taken in less than 30% of cases in both groups.

There were also no significant differences between the occupations of the respondents (p = 0.180) and their health facility utilization (0.838) in both groups. Unemployed women formed 76% of the intervention group while 81% in the control group did not have any employment. Utilization of health facilities by the group

members in the six months preceding the survey was 76% for intervention and 78% for control.

Willingness to pay for maternal services by the group members was significantly different between the two groups (p <0.001 for ANC, delivery and PNC). In the intervention group, 78% of the members were willing to pay for ANC and 46% were willing in the control. WTP for delivery in the intervention was 78% and 59% in the control. WTP for PNC in the intervention was 69% while the control had 46%.

When the average monthly income of the sample was categorized into three groups, we did not find significant difference between intervention and control (p = 0.778). Over 90% of the respondents in both groups fall within the monthly income of less than or equals to one thousand Naira (less than three USD monthly) meaning over 90% of the sample were poor.

Table 5 Comparison of some characteristics of the women between intervention and control groups at baseline

Variable	**Intervention (n=441)**		**Control (n=248)**		**p-value**
	No	(%)	No	(%)	
Marital Status					< 0.001
Married	403	91.4	181	73	
Single	4	0.9	20	8	
Widowed/divor	34	7.7	47	19	

ced

Table 5 continues

Variable	Intervention (n=441)		Control (n=248)		p-value
	No	(%)	No	(%)	
Age					< 0.001
15-24 years	74	16.8	155	62.5	
25-34 years	210	47.6	74	29.8	
35-44 years	137	31.1	17	6.9	
45-49 years	20	4.5	2	0.8	
Religion					< 0.001
Islam	248	56.24	200	80.7	
Christianity	193	43.76	48	19.3	
Ability to read or write in English					0.816
Yes	112	25.4	61	24.6	
No	329	74.6	187	75.4	
Decision on money spending					0.075
Respondent	153	34.7	87	35.1	
Husband/Partner	162	36.7	80	32.3	
Respondent and Husband/partner jointly	98	22.2	74	29.8	
Others	28	6.3	7	2.8	
Decision on Health Care					< 0.001
Respondent	44	9.98	42	17	
Husband/Partner	164	37.19	123	49.6	
Respondent and Husband/partner jointly	200	45.35	76	30.6	

Others			33	7.48	7	2.8

Table 5 continues

Variable	Intervention (n=441)		Control (n=248)		p-value
	No	(%)	No	(%)	
Occupation					0.180
Employed	17	3.85	4	1.6	
Self-employed	88	19.95	44	17.7	
Unemployed	336	76.19	200	80.7	
Utilization of health facility					0.838
Yes	342	77.5	194	78.2	
No	99	22.5	54	21.8	
Willingness to pay for ANC					<0.001
Yes	343	77.8	115	46.4	
No	98	22.2	133	53.6	
Willingness to pay for Delivery					<0.001
Yes	351	79.6	146	58.9	
No	90	20.4	102	53.6	
Willingness to pay for PNC					<0.001
Yes	305	69.2	115	46.4	
No	136	30.8	133	53.6	
Monthly Income					0.778
0-1000	410	93	233	94	
5001-10000	14	3.2	8	3.2	
Above 10000	17	3.9	7	2.8	

Willingness to pay for maternal services

In Table 6 below, the analysis of willingness to pay by the lowest and highest bids for ANC, delivery and PNC were presented. The WTP for ANC in the intervention group was higher than 70% for the lowest and the highest bids, with less than 30% of the respondents were not willing to pay for the lowest and highest bids. WTP for the lowest and highest bids was 40% and 37% respectively in the control groups. Sixty percent (60%) of the respondents were not willing to pay the lowest bid for ANC and 63% was not willing to pay the highest bid.

WTP for delivery was 72% and 68% for the lowest and highest bids in the intervention group. Respondents who had no willingness to pay for delivery for the two bid values were almost 30%. In the control group, WTP for lowest and highest bid was 36% and 32% respectively. Over 60% of the group members had no WTP for the lowest and highest bids.

The respondents' WTP for PNC was 85% for the lowest bid and 69% for the highest bid in the intervention group. WTP for the respondents in the control group for the lowest bid was 62% and 46% for the highest bid, with 40% not having WTP for the lowest bid and 54% not willing to pay for the highest bid.

Table 6 Willingness to pay for maternal services by lowest and highest bid values (Bid 1 and Bid 2) at baseline

GROUP		WILLINGNESS TO PAY			
		N	%	N	%
ANC		***BID 1 (700)**		**BID 2 (1200)**	
	YES	332	75.3	320	72.6
INTERVENTION	NO	109	24.7	121	27.4
	Total	441	100.0	441	100.0
	YES	98	39.5	92	37.1
CONTROL	NO	150	60.5	158	62.9
	Total	248	100.0	248	100.0
DELIVERY		**BID 1 (400)**		**BID 2 (900)**	
	YES	318	72.1	300	68.0
INTERVENTION	NO	123	27.9	141	32.0
	Total	441	100.0	441	100.0
	YES	88	35.5	80	32.3
CONTROL	NO	160	64.5	168	67.7
	Total	248	100.0	248	100.0
POSTNATAL CARE		**BID 1 (200)**		**BID 2 (500)**	
	YES	376	85.3	305	69.2
INTERVENTION	NO	65	14.7	136	30.8
	Total	441	100.0	441	100.0
	YES	154	62.1	115	46.4
CONTROL	NO	94	37.9	133	53.6
	Total	248	100.0	248	100.0

*Bid price is in Nigeria Naira (N330.757 = 1 USD exchange rate during survey period)

At endline (T2), the response rate was 88% as 659 out of the 750 women responded to our questionnaires. In Table 7 below, 86% of the respondents in the intervention group were willing to pay for ANC at the lowest bid value. A one-percent drop was observed for their WTP when the highest bid was offered to them. The respondents in the control group on the other hand, had WTP of 64% for the lowest bid and 60% for the highest bid with a 4% decrease.

WTP for delivery was interestingly the same (78%) for the lowest and highest bid values offered to the intervention group members. The women in the control groups had 61% and 53% WTP for delivery for the lowest and highest bid values respectively.

The WTP for PNC was the highest of the three services for both control and intervention groups. It was 90% for the intervention group and 100% for the control group for the lowest bid. However, the WTP for the highest bid dropped for both groups (80% for intervention and 86% for the control).

Table 7 Willingness to pay for maternal services by lowest and highest bid values (Bid 1 and Bid 2) at endline

GROUP		WILLINGNESS TO PAY			
		N	%	N	%
ANC		**Bid 1 (700)**		**Bid 2 (1200)**	
	YES	351	85.8	345	84.4
INTERVENTION	NO	58	14.2	64	15.6
	Total	409	100.0	409	100.0
	YES	159	63.6	149	59.6
CONTROL	NO	91	36.4	101	40.4
	Total	250	100.0	250	100.0
DELIVERY		**BID 1 (400)**		**BID 2 (900)**	
	YES	318	77.8	318	77.8
INTERVENTION	NO	91	22.2	91	22.2
	Total	409	100.0	409	100.0
	YES	153	61.2	132	52.8
CONTROL	NO	97	38.8	118	47.2
	Total	250	100.0	250	100.0
POSTNATAL CARE		**BID 1 (200)**		**BID 2 (500)**	
	YES	379	92.7	327	80.0
INTERVENTION	NO	30	7.3	82	20.0
	Total	409	100.0	409	100.0
	YES	250	100.0	215	86.0
CONTROL	NO	-	-	35	14.0
	Total	250	100.0	250	100.0

Willingness to pay (WTP) and Income

The descriptive statistics for the average monthly income of the respondents was run and the result presented in Table 8 below. The data like that of WTP is skewed and therefore median was used in presenting it. We excluded all respondents that were employed but did not state their income from the analysis. The median monthly income for the intervention group increased three-fold after intervention from 1000 to 3000. The control group had a median of 2000 at baseline that remained unchanged after intervention.

Data for this analysis were for 271 respondents in the intervention and 175 for the control, respondents that did not disclose their income or with income of zero were excluded in the analysis.

Table 8 Descriptive statistics for the respondents' average monthly income at baseline and endline

			Average monthly income	
SECTOR	Statistics		Baseline	Endline
INTERVENTION	N		271	271
	Mean		2825.86	4299.26
	Median		1000	3000
	Skewness		3.47	4.978
	Percentiles	25	500	1500
		50	1000	3000
		75	2000	5000
CONTROL	N		175	175
	Mean		3028.57	5065.71
	Median		2000	2000
	Skewness		6.026	2.523
	Percentiles	25	1000	1000
		50	2000	2000
		75	3000	5000

To find the difference in the average monthly income between intervention and control groups at baseline and endline, we used Mann-Whitney test and the results are presented below in Tables 9 and 10 respectively.

At T1, the mean rank for average monthly income of the control group was higher than mean rank for the intervention group. The Mann-Whitney U test statistics showed that the difference in monthly income between control group and intervention group is statistically significant ($p < 0.001$)

Table 9 Mann-Whitney U test comparing average monthly income between intervention and control groups at T1

	Sector	N	Ranks	
			Mean Rank	Sum of Ranks
Average monthly income @ T1	INTERVENTION	271	204.54	55430
	CONTROL	175	252.86	44251
	Total	446		
Test Statistics*				
	Average monthly income @ T1			
Mann-Whitney U	18574			
Wilcoxon W	55430			
Z	-3.889			
Asymp. Sig. (2-tailed)	< 0.001			

* Grouping Variable: SECTOR

After intervention at T2, the mean rank of average monthly income for the control group was higher than that of intervention group. However, the Mann-Whitney test statistic (p = 0.279) did not show any statistical significance between the average monthly income of the two groups after intervention. This means the gap between intervention and control in terms of monthly income has closed after intervention (Table 10).

We further carried out Wilcoxon signed ranks test for the intervention groups before and after intervention. The result showed a statistically significant difference in the average monthly income of intervention group at endline ($z = -6.983$, $p < 0.001$). The mean ranks for 286 respondents increased after intervention while 134 respondents had lower income after intervention. Twenty six respondents had same income after intervention. This is an indication of improvement of average monthly income after intervention for 64% of the group members (Table 10).

Table 10 Mann-Whitney U test comparing average monthly income between intervention and control groups at T2

	Sector	N	Ranks	
			Mean Rank	Sum of Ranks
Average monthly income @ T1	INTERVENTION	271	228.76	61994.50
	CONTROL	175	215.35	37686.50
	Total	446		

Test Statistics*	Average monthly income @ T1
Mann-Whitney U	22286.500
Wilcoxon W	37686.500
Z	-1.082
Asymp. Sig. (2-tailed)	0.279

* Grouping Variable: SECTOR

Table 11 Wilcoxon signed ranks test for comparison of average monthly income for intervention group before and after intervention

Ranks

		N	Mean Rank	Sum of Ranks
Average Monthly Income @ endline - Average monthly income @ baseline	Negative Ranks	134[a]	200.26	26835.00
	Positive Ranks	286[b]	215.30	61575.00
	Ties	26[c]		
	Total	446		

a. Average Monthly Income @ endline < Average monthly income @ baseline

b. Average Monthly Income @ endline > Average monthly income @ baseline

c. Average Monthly Income @ endline = Average monthly income @ baseline

Test Statistics[a]

	Average Monthly Income @ T2 - Average monthly income @ T1
Z	-6.983[b]
Asymp. Sig. (2-tailed)	<0.001

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

Maximum WTP for maternal services

Table 12 presents the results of the descriptive statistics for maximum WTP for ANC, Delivery and PNC at baseline. The data for 78 women in the intervention and 60 women in the control groups were used for this analysis. All respondents with WTP

less than the initial bid price for each service were excluded. The WTP data is not normally distributed and therefore using median and percentiles in addition to the mean is the best way to present the data. The mean and median for maximum WTP in the intervention wards were highest for ANC and delivery with PNC having the least mean and median values.

The mean maximum WTP in the control wards was greater for delivery as compared to ANC and PNC. The median values of maximum WTP were same for ANC and delivery services which PNC having the lowest value. In the intervention group, median maximum WTP was higher for ANC while it was similar for the control group. Interestingly, the median values for delivery (1000) and PNC (700) were coincidentally the same values for both intervention and control groups.

Table 12 Descriptive statistics for maximum WTP distribution at baseline

		Maximum WTP		
SECTOR		ANC	Delivery	PNC
INTERVENTION (N = 78)				
Mean		1660.90	1230.77	869.87
Median		1450.00	1000.00	700.00
Skewness		4.135	2.607	3.679
Percentiles	20	1000.00	700.00	500.00
	90	3000.00	2050.00	1550.00

Table 12 continues

CONTROL (N = 60)				
Mean		1503.33	1620.00	835.83
Median		1000.00	1000.00	700.00
Skewness		4.542	6.345	1.796
Percentiles	20	900.00	700.00	500.00
	90	2000.00	3000.00	1500.00

In Table 13, the same descriptive statistics were analysed for the maximum WTP for the three maternal services (ANC, Delivery and PNC) at endline T2. In the intervention group, the mean values for maximum WTP in respect of ANC, Delivery and PNC all changed and were highest for delivery. The median values for ANC and delivery remained the same. In contrast, the mean and median values for maximum WTP in the control group for all the services were higher than the intervention group. The median of maximum WTP for delivery and PNC were also higher in the control group than the intervention group. The median value for maximum WTP for ANC was however same for both intervention and control groups.

Table 13 Descriptive Statistics for maximum WTP distribution at endline

SECTOR		ANC	DELIVERY	PNC
INTERVENTION				
Mean		1414.10	1573.08	1064.74
Median		1000.00	1000.00	700.00
Skewness		5.085	3.744	5.147
Percentiles	20	370	500	200
	90	2000	3000	2000
CONTROL				
Mean		1555.00	1943.33	1290
Median		1000.00	1500.00	1000.00
Skewness		4.649	2.467	4.881
Percentiles	20	300	500	400
	90	2000	3000	2000

In table 14 below, we made a comparison of the maximum WTP for the three services before and after the intervention. In the intervention group, the mean and median maximum WTP decreased for ANC, but in the case of delivery and PNC the median for maximum WTP remained the same before and after intervention while their means increased after invention.

In the control group, there was also an increase in the means for maximum WTP for ANC, delivery and PNC. The median for the maximum WTP for delivery and PNC also increased with the median WTP for ANC remaining same after intervention.

Table 14 Maximum WTP for ANC, Delivery and PNC before and after intervention

SECTOR		Maximum WTP					
		ANC		Delivery		PNC	
		Before	After	Before	After	Before	After
INTERVENTION (N = 78)							
Mean		1660.90	1414.10	1230.77	1573.08	869.87	1064.74
Median		1450.00	1000.00	1000.00	1000.00	700.00	700.00
Skewness		4.135	5.09	2.607	3.74	3.679	5.15
Percentiles	20	1000.00	1000.000	700.00	700.000	500.00	480.000
	90	3000.00	2050.00	2050.00	3000.00	1550.00	2000.00
CONTROL (N = 60)							
Mean		1503.33	1555	1620.00	1943	835.83	1290
Median		1000.00	1000.00	1000.00	1500.00	700.00	1000.00
Skewness		4.542	4.65	6.345	2.47	1.796	4.88
Percentiles	20	900.00	1000.000	700.00	1000.000	500.00	500.000
	90	2000.00	2500.00	3000.00	3900.00	1500.00	2000.00

In Tables 15 and 16 below, we made a comparison of the maximum WTP for the maternal services for intervention and control groups at baseline (T1) using Mann-Whitney U test for independent samples.

From the result in Table 15, comparing the mean ranks of the services for maximum WTP, the mean ranks for maximum WTP in the intervention group for ANC and PNC were higher than the mean ranks of ANC and PNC in the control group. In the case of maximum WTP for delivery, the control group had higher mean ranks as compared to intervention group.

However, the U statistics for all the three services as shown in Table 16 (ANC U=2044, p = 0.192, Delivery U=2210.50, p = 0.567, and PNC U = 2295, p = 0.844) did not indicate any significant difference between the intervention and control groups in terms of maximum WTP. We therefore, conclude from this result that there was no significant difference between the maximum WTP of intervention and control group at baseline.

Table 15 Mann-Whitney test-comparing differences between mean ranks of maximum WTP for intervention and control groups at baseline

Max. WTP	Sector	N	Mean Rank	Sum of Ranks
ANC	INTERVENTION	78	73.29	5717.00
	CONTROL	60	64.57	3874.00
	Total	138		
Delivery	INTERVENTION	78	67.84	5291.50
	CONTROL	60	71.66	4299.50
	Total	138		
PNC	INTERVENTION	78	70.08	5466.00
	CONTROL	60	68.75	4125.00
	Total	138		

Table 16 Mann-Whitney U test statistics table comparing intervention and control groups at baseline

	Maximum WTP		
	ANC	Delivery	PNC
Mann-Whitney U	2044.000	2210.500	2295.000
Wilcoxon W	3874.000	5291.500	4125.000
Z	-1.304	-.572	-.197
Asymp. Sig. (2-tailed)	.192	.567	.844

a. Grouping Variable: SECTOR

Tables 17 and 18 below, present the result of comparison of the maximum WTP for the maternal services between intervention and control groups at endline, using Mann-Whitney U test for independent samples for the mean ranks of the services and the U-test statistics. The mean ranks for maximum WTP for all the services were higher in the control group than the intervention group (Table 16). The U test statistic (Table 17) indicated statistically significant differences between intervention and control groups for maximum WTP for delivery and PNC (Delivery U = 1692.500, p = 0.005 and PNC U = 1698.000, p = 0.005). Interestingly, although the mean ranks for maximum WTP was higher for control, the difference was not statistically significant between the two groups (ANC U = 2189.500, p = 0.495)

Table 17 Mann-Whitney test-comparing differences in mean ranks between maximum WTP for intervention and control groups at endline

Max. WTP	SECTOR	N	Mean Rank	Sum of Ranks
ANC	INTERVENTION	78	67.57	5270.50
	CONTROL	60	72.01	4320.50
	Total	138		
Delivery	INTERVENTION	78	61.20	4773.50
	CONTROL	60	80.29	4817.50
	Total	138		
PNC	INTERVENTION	78	61.27	4779.00
	CONTROL	60	80.20	4812.00
	Total	138		

Table 18 Mann-Whitney U test statistics[a] table for Intervention and Control groups at Endline

	Maximum WTP		
	ANC	DELIVERY	PNC
Mann-Whitney U	2189.500	1692.500	1698.000
Wilcoxon W	5270.500	4773.500	4779.000
Z	-0.683	-2.826	-2.811
Asymp. Sig. (2-tailed)	0.495	0.005*	0.005*

a. Grouping Variable: SECTOR

* Statistical significance at p-value < 0.05

In analysing the difference between the maximum WTP for the services in the intervention groups at baseline and endline, we used Wilcoxon Sign-Rank test to do the comparison. Table 19 provides data on the comparison of respondents' maximum WTP before and after intervention for the ANC, delivery and PNC services. For ANC, 71 respondents had lower maximum WTP after intervention and 41 had higher maximum WTP after intervention. There was no change in case of 26 respondents at after intervention.

In terms of maximum WTP for delivery, 46 respondents had lower values after intervention while 71 had higher values. Same values of maximum WTP were recorded for 21 respondents. PNC had 68 respondents which higher WTP after intervention while 50 respondents had lower values. There was no change for 20 respondents.

In Table 20, the Z statistics show statistically significant values for maximum WTP for delivery ($Z = -2.263$, $p = 0.009$) and PNC ($Z = -2.465$, $p = 0.014$) after intervention. There was no significant change of maximum WTP for ANC after intervention ($Z = -1.692$, $p = 0.091$).

Table 19 Wilcoxon Sign-ranked test showing the comparison between maximum WTP for intervention group at baseline and endline

Maximum WTP		N	Mean Rank	Sum of Ranks
ANC @ T2 - ANC @ T1	Negative Ranks	71[a]	52.75	3745.50
	Positive Ranks	41[b]	62.99	2582.50
	Ties	26[c]		
	Total	138		
Delivery @ T2 - Delivery @ T1	Negative Ranks	46[d]	54.09	2488.00
	Positive Ranks	71[e]	62.18	4415.00
	Ties	21[f]		
	Total	138		
PNC @ T2 - PNC @ T1	Negative Ranks	50[g]	51.90	2595.00
	Positive Ranks	68[h]	65.09	4426.00
	Ties	20[i]		
	Total	138		

a. WTP for ANC @ T2 < WTP max for ANC @ T1

b. WTP for ANC @ T2 > WTP max for ANC @ T1

c. WTP for ANC @ T2 = WTP max for ANC @ T1

d. WTP for Delivery @ T2 < WTPmax for Delivery @ T1

e. WTP for Delivery @ T2 > WTPmax for Delivery @ T1

f. WTP for Delivery @ T2 = WTPmax for Delivery @ T1

g. WTP for PNC @ T2 < WTPmax for PNC @ T1

h. WTP for PNC @ T2 > WTPmax for PNC @ T1

i. WTP for PNC @ T2 = WTPmax for PNC @ T1

Table 20 Wilcoxon Sign-Rank test for intervention groups at endline (T2)

	Maximum WTP		
	ANC @ T2 - ANC @ T1	Delivery @ T2 - Delivery @ T1	PNC @ T2 - PNC @ T1
Z	-1.692[b]	-2.623[c]	-2.465[c]
Asymp. Sig. (2-tailed)	0.091	0.009*	0.014*

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

c. Based on negative ranks.

* statistical significance at p-value <0.05

Correlation analysis for maximum WTP of maternal services and Income

We used Spearman's correlation analysis to find the correlation between monthly income and maximum WTP at baseline and endline for the maternal services. Before intervention at T1, maximum WTP for ANC and PNC before intervention were found to be having weak but statistically significant correlation with monthly income (ANC $r = 0.113$, $p < 0.05$ and PNC $r = 0.142$, $p < 0.01$). After intervention at T2, all the three services were found to have weak positive correlations with monthly income which had statistical significance (ANC $r = 0.241$, $p < 0.01$; Delivery $r = 0.418$, $p < 0.01$ and PNC $r = 0.126$, $p < 0.01$) as presented in Table 21 below.

Table 21 Spearman correlation analysis between monthly income and maximum WTP for maternal services at T1 and T2

Maximum WTP	Baseline (T1)		Endline (T2)	
	Monthly Income		Monthly Income	
	r	p-value	r	p-value
Maximum WTP for ANC	0.113*	0.017	0.241**	< 0.001
Maximum WTP for Delivery	0.072	0.131	0.418**	< 0.001
Maximum WTP for PNC	0.142**	0.003	0.126**	0.008

*****correlation significant at the 0.05 level (2-tailed),

**correlation significant at the 0.01 level (2-tailed)

Factors associated with maximum WTP for maternal services

In order to find the association between maximum WTP and the selected variables of interest, we used linear regression analysis. . In addition to age, marital status and religion, we entered the following variables into each of the three models of maximum WTP values: knowledge of pregnancy complications, decisions on money spending and health care, ability to read and write in English and other languages (Hausa and Arabic). Others included the starting and highest bids for each service and the average monthly income, all with a view to finding their association with WTP after the intervention. The values of WTP and monthly income were converted to

natural logarithms to do the regression analysis. The results are presented in Tables 22, 23 and 24 below.

The final regression model for maximum WTP for ANC in Table 21 found four variables to have statistically significant association with the maximum WTP for ANC. These are decision on health care (p = 0.002), monthly income (p < 0.001), the starting bid for ANC (bid 1 = 700 Naira) and the highest bid (bid 2 = 1200 Naira). Utilization of health facility and decision on money spending were not associated with the maximum WTP for ANC

Table 22 Regression analysis showing factors associated with maximum WTP for ANC

	Unstandardized Coefficients		
Variable	B	SE	p-value
(Constant)	6.157	0.264	<0.001
Decision on Health care	0.255	0.081	0.002
Monthly income	0.102	0.028	<0.001
Decision on Money Spending	0.112	0.072	0.120
Health Facility utilization	0.094	0.059	0.112
Bid 2 for ANC	-0.254	0.073	0.001
Bid 1 for ANC	0.247	0.081	0.002
Adjusted R^2	0.160	0.438	

(Dependent Variable: log_max. WTP for ANC)

In respect of delivery, like with ANC, income (p <0.001) and decision on health care (p < 0.001) were found to be significantly associated with the maximum WTP for delivery services. Religion (p < 0.001), the highest bid (bid 2 = 900 Naira, p = 0.014) and the ability to read and write in other languages (p = 0.026) were equally found to be associated with the maximum WTP for delivery services. (Table 22)

Table 23 Regression analysis showing factors associated with maximum WTP for delivery

	Unstandardized Coefficients		
Variable	B	SE	p-value
(Constant)	5.951	0.381	<0.001
Monthly income	0.204	0.042	<0.001
Decision on Health care	0.425	0.084	<0.001
Religion	-0.318	0.084	<0.001
Bid 2 for Delivery	-0.188	0.076	0.014
Read and write in other languages	-0.163	0.073	0.026
Adjusted R^2	0.253	0.597	

(Dependent variable: log_maximum WTP for Delivery)

Maximum WTP for PNC like ANC and delivery, is significantly associated with monthly income (p < 0.011) and decision on health care utilization (p < 0.001). (Table 23)

For all the three maternal services, monthly income and decision on health care were common factors significantly associated with their maximum WTP. Interestingly,

this is the expected outcome for the intervention when women are educationally and economically empowered.

Table 24 Regression analysis showing factors associated with maximum WTP for PNC

	Unstandardized Coefficients		
Variable	B	SE	p-value
Decision on Health care	0.575	0.099	<0.001
Monthly income	0.104	0.041	0.011
Adjusted R^2	0.106	0.717	

Dependent variable: log_maximum WTP for PNC

Utilization of Maternal Services

Only pregnant women (n = 157) within the sample were chosen for this analysis because pregnant women only utilize antenatal care services, delivery and postnatal services. The focus of this study is to document the outcomes associated with these maternal services. Table 25 presents the pattern of utilization of maternal services by pregnant women at both baseline and endline.

At baseline, 93% of the pregnant women in the intervention group utilized health facilities in the six months preceding the survey with 7.1% not utilizing. In the control group, 78% utilized the health facilities while 22% of them did not. Utilization

pattern however, changed at endline for both groups. In the intervention group, the number that visited the facilities for utilization of the maternal services dropped to 76% while those that did not utilize the facility also increased to 24%. In contrast, the number of women in the control group that utilized the health facilities dropped to 34% while the number of that did not use health facilities increased to 66%.

Table 25 Utilization of health facilities for maternal services by pregnant women at baseline and endline (in the 6 months preceding the survey)

Sector	Utilization	Baseline (T1) (n=157)		Endline (T2) (n=164)	
		n	%	n	%
Intervention					
	Utilized HF	79	92.9	80	76.2
	Not utilized HF	6	7.1	25	23.8
Control					
	Utilized HF	56	77.8	20	33.9
	Not utilized HF	16	22.2	39	66.1

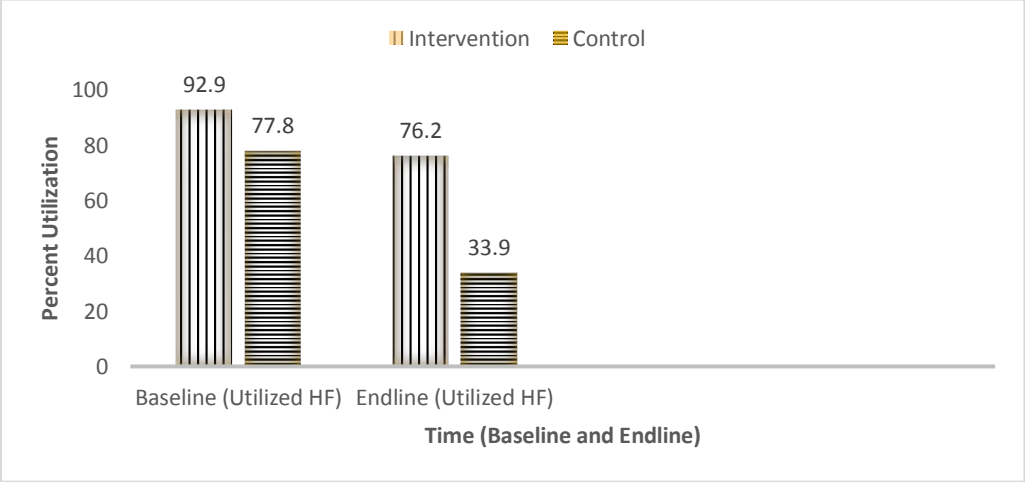


Figure 5 Percent utilization of health facilities by pregnant women at baseline and endline

In analysing the reasons for last visit to the facility in Table 26 at baseline, the major reasons for visit in both groups were found to be for undisclosed illnesses (25% in

the intervention and 42% in the control group). ANC visits, which constituted 21% of all visits for the intervention group and 17% for the control group, were the second major reasons for facility visits. Others reasons included child immunization, child health check and family planning. Four percent (4%) of respondents in the intervention group and 7% in the control had no facility visit at all at T1.

Table 26 Utilization of health facilities by pregnant women at baseline according to reasons for visit

Reason for last visit	Baseline (T1)			
	Intervention		Control	
	n	(%)	n	(%)
No Visit	3	(3.5)	5	(6.9)
Family Planning	11	(12.9)	4	(5.6)
Child Immunization	14	(16.5)	7	(9.7)
Antenatal Care	18	(21.2)	12	(16.7)
Campaign	4	(4.7)	-	-
Child heath check	12	(14.1)	12	(16.7)
Illness	21	(24.7)	30	(41.7)
Other	2	(2.8)	2	(2.8)
Total	85	(100)	72	(100)

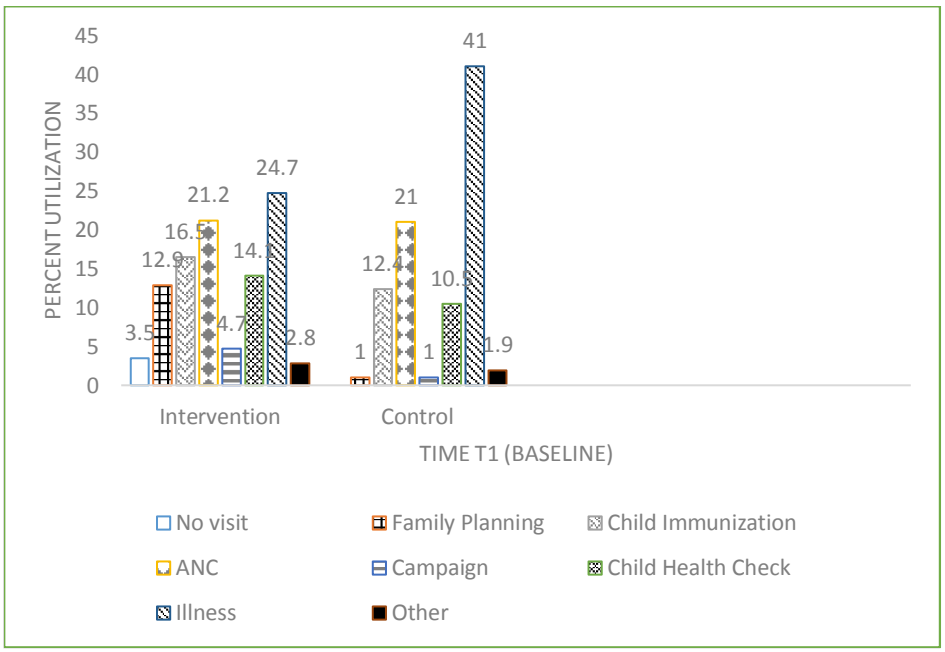


Figure 6 Percent utilization of health facility by pregnant women at T1 according to services

At T2 in Table 27, illness was still the major reason for facility visit by pregnant women in both groups (41% in intervention and 36% in control). ANC visits were the second major for both groups as well (21% intervention and 24% control). Child immunization and child health check were equally significant reasons for visit in both groups. Only 4% of respondents in the intervention visited due to delivery with none in the control group. Post-partum care constituted 6% of visits in the intervention and 2% in the control group.

Table 27 Utilization of health services by pregnant women at endline according to reasons for visit

Reason for last visit	Endline (T2)			
	Intervention		Control	
	n	(%)	n	(%)
Family Planning	1	(1)	3	(5.1)
Child Immunization	13	(12.4)	5	(8.5)
Antenatal Care	22	(21)	14	(23.7)
Delivery	4	(3.8)	-	-
Post-partum care	5	(5.8)	1	(1.7)
Neonatal care	6	(2.9)	3	(5.1)
Campaign	1	(1)		-
Child heath check	11	(10.5)	8	(13.6)
Illness	43	(41)	21	(35.6)
Collect commodity	-	-	3	(5)
Other	2	(1.9)	1	(1.7)
Total	105	(100)	59	(100)

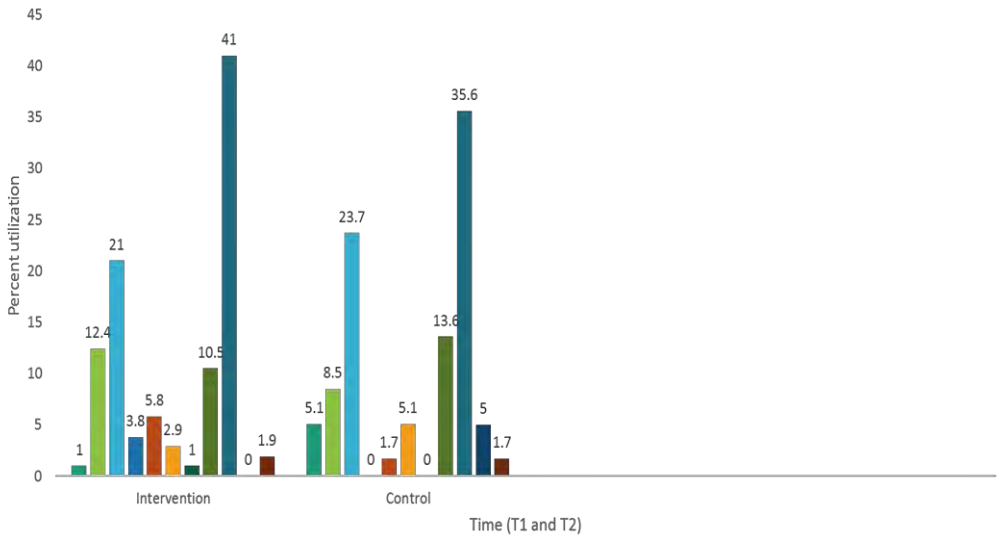


Figure 7 Percent utilization of health facility according to services at T2

A bivariate analysis using Pearson Chi-square was used to compare utilization of facility between intervention and control groups at baseline and endline due to utilization due to ANC, delivery and PNC. Only data for respondents who utilized the health facilities were used for this analysis in both groups. (Table 28)

At baseline, for all the maternal services, there were no significant differences between intervention and control groups in terms of utilization of facilities due to delivery and PNC (delivery p = 0.646 and PNC p = 0.353) but a significant association was found between the groups in utilization due to ANC (ANC p = 0.019). After intervention, there were no significant changes in utilization of facilities for all the services as compared to the control group.

Table 28 Chi-square analysis of percent utilization of health facility for maternal services before and after intervention

Maternal Service	**Percent Utilization**		**p-value**
ANC	Intervention (n %)	Control (n %)	0.019
Before	17 (3.9)	2 (0.8)	
After	36 (8.8)	25 (10.0)	0.607
Delivery			
Before	3 (0.7)	1 (0.4)	0.646
After	8 (2.0)	3 (1.2)	0.462
PNC			
Before	5 (1.1)	5 (2.0)	0.353
After	4 (1.0)	4 (1.6)	0.479

We made a comparison of the relationship between utilization and some of the respondents' socio-economic and demographic characteristics before and after intervention using Pearson's chi-square. At baseline, marital status ($p < 0.01$), age ($p = 0.013$), religion ($p = 0.027$), time to health facility ($p < 0.01$) and means of transport to facility ($p < 0.001$) were found to be significant factors associated with utilization of health facility. Others included previous pregnancy ($p < 0.001$), knowledge of signs of pregnancy complications ($p < 0.001$), maximum WTP for ANC ($p < 0.01$), maximum WTP for delivery ($p < 0.01$) and maximum WTP for PNC ($p < 0.01$).

After intervention, age ($p = 0.046$), religion ($p = 0.017$), time to facility ($p < 0.01$), and means of transport to facility were found to be significantly related with facility utilization. Current pregnancy ($p = 0.015$), knowledge of signs of pregnancy complications ($p = 0.015$) and decisions to spend money and utilize health care (p-value < 0.01) were equally found to be significantly related with utilization.

Average monthly income ($p < 0.01$) and maximum WTP for ANC, delivery and PNC (all with $p < 0.01$) showed significant relationship with utilization after intervention.

Factors associated with utilization of health facility for maternal services

We analysed the factors associated with utilization health facility for maternal services first by running a Pearson's chi-square analysis. All significant variables with a

$p < 0.25$ were then entered into a multiple logistic regression analysis. Out of the 18 variables analysed for relationship with utilization at both baseline and endline.

Eight factors in the analysis were found to be commonly significant with utilization of maternal services at both baseline and endline. These included age, religion, time to reach the facility and means of transport to the facility. Others were current pregnancy, knowledge of pregnancy complications, WTP for ANC and WTP for delivery. Marital Status and previous pregnancy were additional variables significant at baseline, while monthly income and decision on money spending were the additional factors significantly associated with maternal services utilization at endline. Table 29 presents the chi-square analysis results.

Table 29 Chi-square test result for relationship between utilization of health facilities and socio-demographic factors at T1 and T2

Variable	**Baseline T1)**		**Endline (T2)**	
	Chi-square	p-value	Chi-square	p-value
Membership of savings group	0.042	0.838	0.33	0.566
Marital status	10.683**	0.005	7.156	0.128
Age	10.731*	0.013	8.010*	0.046
Religion	4.871*	0.027	8.174*	0.017
Availability of Health Facility nearby	1.832	0.176	0.142	0.706
Time to health facility	54.590**	0.001	54.029**	0.001
Means of transport to health Facility	64.829***	0.000	22.460**	0.001
History of previous pregnancy	15.800***	0.000	0.701	0.403
currently pregnant	7.902**	0.005	1.971*	0.015
Knowledge of signs of pregnancy complications	24.870**	0.003	22.010*	0.015
Ability to read and write in English	0.872	0.351	1.887	0.17
Occupation	4.867	0.088	1.574	0.455
Decision on Money spending	7.701	0.103	57.869**	0.001
Decision on Health care	8.55	0.073	40.750**	0.001
Monthly income	38.649	0.660	66.819**	0.003
Maximum WTP for Antenatal care	112.696**	0.001	58.839**	0.001
Maximum WTP for Delivery	102.489**	0.001	53.054**	0.004
Maximum WTP for postnatal care	27.791	0.369	70.072**	0.001

*p < 0.05, **p < 0.01 ***p < 0.001

All the factors with a p-value less than 0.25 from the chi-square analysis were entered into the multiple logistic regression model with the utilization of health facility as the dependent variable, the findings which are summarized in Table 30.

We found five variables to be significantly associated with health facility utilization from the result of the binary logistic regression. Women within the age group 15-24 years were found to be 2.5 times more likely to visit a health facility in comparison to those within 25-49 years of age (AOR = 2.547, 95% CI = 1.103-5.881). Respondents with current pregnancy were also found to be more than 2 times likely to visit health facility as compared to non-pregnant women (AOR = 2.220, 95% CI = 1.060-4.650).

In terms of WTP for ANC at the maximum offered bid of 1200 Naira, it was found that respondents who answered ”Yes” for WTP for ANC at 1200 Naira, had lower odds of visiting a facility than those that answered “No”- meaning they had less WTP for ANC at that amount - (AOR = 0.434, 95% CI = 0.234-0.803).

A similar finding was seen with WTP for PNC at the highest bid offered (500 Naira). All the women that answered “Yes” for WTP for PNC at the highest bid were having lower odds of visiting a health facility than those that answered “No”.

Decision on health care utilization was also a significant finding of this study. Women who had the independence of deciding for themselves on matters pertaining to their own health care, or took joint decisions with their husbands, were 2 times more

likely to visit a facility as compared to decisions taken by either husbands alone or others on their behalf (AOR = 2.237, 95% CI = 1.243-4.029)

Table 30 Binary logistic regression result showing factors associated with facility use for maternal services

Variable	B	AOR	Sig.	95% C.I.for EXP(B) Lower	Upper
AGE					
15-24 years	0.935	2.547*	0.029	1.103	5.881
25-49 years (ref)					
Currently pregnant					
Yes	0.798	2.220*	0.034	1.060	4.650
No (ref)					
WTP for ANC at highest bid (1200)					
Yes	-0.835	0.434**	0.008	0.234	0.803
No (ref)					
WTP for PNC at highest bid (500)					
Yes	-1.348	0.260**	0.001	0.121	0.557
No (ref)					
Decision on Health Care					
Respondent/Husband and Resp. jointly	0.805	2.237**	0.007	1.243	4.029
Others (ref)					
Constant	0.174	1.190	0.688		
*p < 0.05, **p < 0.01					
Omnibus Model Chi-square	47.581 (p < 0.001)				
-2 Log likelihood	288.084				
Cox and Snell R^2	0.418				
Nagelkerke R^2	0.219				

Qualitative Analysis Findings

Two focus group discussions (FGDs) were conducted in the study involving women of childbearing age (15-49 years) from two political wards of the intervention LGAs. On reviewing the transcribed and audiotaped data, content analysis was done and two themes were identified: Access problems and barriers to utilization of maternal services, concept of women empowerment and ways to empower women in order to pay for maternal services. These were based on the responses of the women with relevant quotes from their experiences and comments.

Access problems and barriers to utilization of maternal services

A number of interesting factors were enumerated by the women on why they have delays in seeking maternal care and the barriers preventing them utilizing care even when available. The major barriers they identified were: ignorance of the women (illiteracy), getting permission from husbands to visit health facility, poor access roads to the facilities especially in villages and unavailability of health facilities in some villages. Others included shortage of health workers, poor attitude of the women generally in seeking health and lack of economic empowerment.

"A lot of women go through horrible complications, mostly as a result of ignorance. There's need for help, also groups like ours should be provided in

villages to help spread awareness around MNCH issues and help save lives of the women in the villages." (MG 1. Gombe LGA)

"Some women want to go to the hospitals but their husbands will stop them from going. I believe through spreading of awareness, a lot of people in the rural communities will understand the importance of going to health facilities." (MG 2. Gombe LGA)

"A pregnant woman is expected to visit facility as she noticed she is pregnant for ANC and to receive proper medical care till delivery. Men sometimes don't allow their spouses to visit facility" (MG 3. Kaltungo LGA)

"Among the causes of delay in seeking health care is because the gov't don't send health workers to the villages, even the health workers don't like going to villages, if they are posted to a village, they will try and see they change their posting. We urge the gov't to be very serious about this." (MG 5. Gombe LGA)

Concept of Women Empowerment

The understanding of the concept of women empowerment from the perspective of the women engaged in the FGDs differed. However, they all agreed that reliance on husbands to take care of their needs including health care is a form of disempowerment. They consider a woman to be empowered when she is literate and is able to take decisions on the money she earns and her health care issues independently. They also see engagement of women in business ventures to get profit and support the family as a means of empowering the women. One interesting finding though was that most of them did not consider using the profit they get from the loans they obtain from their savings to pay for their health care needs as the top

most priority. Instead, they mentioned giving support to their husbands, family members and purchase of household items first before considering health care issues.

> *"Yes, I consider relying on husband as lack of empowerment of the women. The voluntary saving is of immense benefit to me even without income or additional support. Yes, literacy is very important and a source of empowerment" (MG 7. Kaltungo LGA)*

> *"As it is now, I have a stable income after collecting loan and repaying it. I have a grinding machine that provides me with stable income and this helps me in making household decision. I do support my husband by paying the children's school fees and assessing the MNCH services. This does not change my status as a house wife, but has changed my status as a household decision maker. Am very happy for that." (MG 4. Kaltungo LGA)*

> *"My husband now asks what I will cook and we take decision together because now I am empowered, but before when I had nothing, nobody looked for my opinion, we would manage only what he brought to the table." (MG 3. Gombe LGA)*

CHAPTER V

DISCUSSIONS CONCLUSION AND RECOMMENDATIONS

This chapter gives a summary of the findings of the results of this study and their interpretation in the context of the research hypothesis and research questions. It will also discuss the results of similar studies done in the research area with a view to looking at areas of concurrence or divergence. Thereafter, the author will give recommendations for policy solutions and further research on the area.

WTP for maternal services

Willingness to pay for maternal services as components of health care services have been found to be determined by many factors which include age, education, income, cost and quality of services provided (Aizuddin, Sulong, & Aljunid, 2012). We found from the results of this study some changes in the willingness of respondents to pay for maternal services after intervention.

WTP for ANC and Delivery services interestingly remained almost the same for the lowest and highest bids offered in both intervention and control groups. WTP for PNC on the other hand was lower for the higher bids in both groups. These findings might be explained by the fact that the value or utility attached to ANC and delivery was same for both groups, without recourse to the bid values offered. The lower WTP for PNC was not surprising as PNC has the least attention by women in the region with

80% of women not attending postnatal check-up two days after delivery according to NDHS 2013 {Macro, 2014}.

In order to know whether women were willing to pay for maternal services or not, the close-ended question format with bidding was used for this study. Each maternal service had questions on the respondents' WTP for the lowest and highest bids offered to them. The starting bids were estimated from sampling health facilities, prior to data collection, from the three senatorial zones of Gombe State to find out how much each facility was charging for ANC, delivery and PNC. These charges were exclusive of laboratory investigations and cost of paying for surgery or other complications.

We took the average cost for each service and arrived at the starting bid values as follows: ANC 700 Naira as lowest bid and 1200 for the highest bid, delivery 400 Naira for the lowest bid and 900 Naira for the highest bid and PNC 200 Naira for the lowest bid and 500 Naira for the highest bid. (Exchange rate 1 USD = 330.757 Nigeria Naira during the period of data collection)

We used the lowest and highest bid values to determine the respondents' WTP for these services. WTP like demand, is expected to decrease with increasing prices of commodities or services. However, health care is a non-market good and cannot be purchased directly. Some health conditions may be life threatening warranting people to have WTP for the charges even at higher prices. We therefore, do not

expect to see a serious decrease in WTP in such situations. This may be connected with the higher value women attach to these services.

In view of this, there is little surprise in the similar trend of WTP for these maternal services observed in the study at the lowest and highest bids offered to them, both before and after intervention. Due to the fear of complications especially during childbirth and value attached to health care, little difference was seen in the WTP of the respondents for lower and higher bid values for all the services. Our finding agrees with findings of Pavel et al, from their research where they found that patients who had satisfaction with the quality of health care provided or had increased chances of recovery, were found to show maximum WTP for the services (Aizuddin et al., 2012).

In a study to assess the WTP of kidney patients to pay for transplantation, it was found that as the price of kidney transplant increased and the opinion of the doctor was important, WTP increased {Herold, 2010}

Maximum WTP for maternal services

In order to assess the maximum WTP for the respondents, they were asked to state the maximum amount they would be willing to pay for the individual maternal

services (ANC, delivery and PNC). The amounts stated had varied greatly between the respondents, which might have been due to several factors like value attached to the services, average monthly income and their attitudes towards health care.

The data we obtained from the respondents for these services were not having a normal distribution due to the variance, we therefore used median to present them. In the analysis of maximum WTP values stated by the respondents, we excluded all those that stated a maximum value lower than the starting bid offered for each of the services. All women that did not state their maximum WTP for all the three services were also excluded from the analysis. This was for consistency and therefore the sample size for the analysis reduced (Pavel, Chakrabarty, & Gow, 2015).

At baseline, the median for maximum WTP was highest for ANC (1450) and lowest for PNC (700) in the intervention group. The median values however, remained same for delivery and PNC after intervention. In the control group, the median for maximum WTP in respect of ANC remained same (1000) before and after intervention. There was an increase in terms of median maximum WTP for delivery and PNC after intervention.

Even though there was an apparent difference in the maximum WTP between the intervention and control groups at baseline and endline, we found that there was no significant difference in the maximum WTP at baseline for all the three services between the 2 groups using Mann-Whitney U test (ANC $p = 0.192$, delivery $p = 0.567$

and PNC p = 0.844). After intervention, the same test was done between the two groups and statistically significant changes were found between the intervention and control groups for delivery and PNC services (p = 0.005) with no significant change in the case of ANC between the two groups (p = 0.495).

In order to find the impact of the intervention, we compared the intervention groups at baseline and endline, using Wilcoxon sign-rank test. We found that maximum WTP for delivery and PNC services were statistically significantly after intervention (delivery p = 0.009 and PNC p = 0.014). There was no significant difference in the maximum WTP for ANC before and after intervention (p = 0.091). This means there was an improvement in the maximum WTP for delivery and PNC services after intervention.

We also looked at the relationship between WTP and Income of the respondents before and after intervention. At baseline, there was a marked difference between the income of the control group and the intervention group with respondents from the control group having higher average monthly income than members of the intervention group do.

Our analysis of maximum WTP for the three maternal services involved finding out the factors associated with having maximum willingness to pay for these service. We used a regression model for each of the service and used the independent variables of interest along with some of socio-economic characteristics of the groups to adjust for confounders.

Interestingly for all the services, decision on health care and income were found to be the common factors associated with maximum WTP of each service. In addition to these factors, maximum WTP for ANC was also seen to be associated with high and low bid values – meaning women have willingness to pay for ANC whether low or high prices are charged. Maximum WTP for delivery service was also associated with religion, ability to read and write in other language (Hausa) and high bid price. This is a sign that women would have maximum willingness to pay for delivery even at higher prices.

The significance of the ability to read and write in other language as a factor associated with WTP for pregnancy is expected in part due to literacy intervention programme, which was delivered in Hausa language. The influence of religion may not be unconnected with the high level of advocacy with religious leaders from Government and health NGOs in the state on the importance of maternal health care.

Utilization of health facilities

Although data were collected for utilization of health facilities in the 6 months preceding the survey from all the respondents, we selected only data from pregnant women for the analysis. This is in line with the focus of this study, which is centred

on outcomes for ANC, delivery and PNC services, which are utilized by pregnant women only.

The pattern of utilization was dissimilar for pregnant women in the intervention and control groups before and after intervention. The percentage of women who utilized health facility dropped from 93% at baseline to 76% at endline for the intervention group. Non-utilization of health facility for any service was recorded for 7.1% of the women in the intervention group but this increased to 24% after intervention.

In the control group, 78% of their pregnant women utilized health facilities at baseline and this dropped to 34% at endline. The percentage of pregnant women not utilizing health facilities after intervention in the control group was more than twice that of the intervention group.

Even though we expected to see a higher trend of facility visit, we are not surprised at the findings given the sample of pregnant women was only 23% of the total respondents enrolled for the study. Our major concern though, is the reason for the facility visit to see any improvement in visits associated with ANC, delivery and PNC.

In spite of the small number of the pregnant women analyzed, we found that their utilization of health facilities for ANC services was unchanged before and after intervention. Visits due to delivery (3.8%) and postpartum care (5.8%) were also recorded which were not seen before intervention. However, when we used bivariate analysis to compare utilization of respondents in the intervention and control groups,

we did not find any significant changes for all the maternal services at baseline except for ANC visits. After intervention, we found no significant changes for all the three services in the intervention and control groups.

The major reasons for facility visits by the pregnant women before and after intervention were for illnesses, family planning, ANC, child immunization and child health check. Other reasons included collection of commodities like treated mosquito nets, routine immunization or MNCH campaigns. After intervention, visits due to delivery and postpartum care were documented in the intervention group.

We can see that most of the reasons for facility visits were not directly related to maternal services utilization, this is because women have additional roles in catering for the health of their children in addition to their own health care.

To explore the factors associated with health facility utilization by women, we used chi-square test and binary logistic regression analysis. We found five factors in our final regression model to be significantly associated with utilization of health facility for health care services. The age of the women was a significant factor in utilization of facilities. Our study found women between 15 – 24 years were more likely to visit a health facility than those in the age group 25 – 49 years. Women with current pregnancy were also found to be more likely to visit a facility than non-pregnant women.

Independence of women to take health care decisions alone or jointly with their husbands was also another significant factor influencing utilization of health facilities in this study. This is consistent with the findings of a similar study {Sipsma, 2013} where women that had more decision power were found to have higher odds of visiting health facilities than women with less decision power. Findings also from Nepal DHS indicate that age, and higher autonomy of women were some of the factors associated with higher use of maternal health services (Foreit & Foreit, 2001).

Empowerment and Barriers to maternal health utilization – Qualitative findings

The views of women from the FGDs conducted were explicit on the barriers that deter them from the use of maternal services. Chief among the reasons that featured prominently in the discussions were ignorance of women on health care, problems getting permission from husbands to visit a facility and lack of economic empowerment. Other reasons included shortage of health workers, and poor health seeking behaviour from the women especially in rural areas. These qualitative findings from our study tally with a similar qualitative study in South Africa to examine the determinants of access and use of maternal health services. Staff shortages, financial challenges and lack of knowledge were all found to be factors contributing to non-use of maternal health services by women (Adhikari, 2016).

In our discussions with the group of women during the FGDs, they enumerated their own perception of empowerment. They consider literacy and autonomy of women in taking decisions pertaining to the money they earn and health care needs as empowerment. They also take the engagement of women in business ventures like trading as an empowerment strategy.

However, one interesting finding of note was the fact that they emphasized on using any profit realized from their business ventures in supporting their family as the highest priority. They did not mention using the profit to pay for their health care needs even though they mentioned financial challenges as barrier to utilizing maternal services. This could be an attitudinal and cultural attachment of the women to servicing the needs of their families and husbands whenever they get the means, which is seen as a noble thing from women in the society.

The perspective and understanding of the empowerment from these women is consistent with the categorization of the five dimensions of women empowerment by Leo Kawaguchi et al from their study investigating the association between women empowerment and utilization of health services in an Egyptian village. Although few of them were literate, they still mentioned three of the five dimensions of women empowerment which included economic security and stability, support by family and freedom from domination and decision making in daily life. Their study

found a support by family and freedom from domination to be positive associated with maternal health services utilization (Tsawe & Susuman, 2014).

The findings from the FGDs reinforce the ones found earlier in the quantitative analysis on the factors associated with utilization of health facilities for maternal health services.

Limitations

The following were some of the limitations of the study:

The scope of the study was to Gombe State, North Eastern state comprising 11 LGAs. However, only four LGAs had fully established women savings groups. Accessibility to all the wards of the LGAs was easier and more secure in Gombe and Kaltungo LGAs because of the insurgency making complete access to the rest for any study very risky and insecure.

Other existing women groups in the same communities were not included even though savings was part of their activities.

The data for analyzing utilization was restricted to only pregnant women as the focus of the study was on ANC, delivery and PNC, services all utilized by pregnant women.

The design of this study being quasi-experimental with non-equivalent control group, we have not used the techniques of ensuring similarity between the experimental and comparison groups like propensity score matching. This might have increased the

risk of selection bias. Observed differences between the two groups might have been partly due to the imperfect match between the intervention and control groups rather than by intervention.

Conclusion

We wish to make the following conclusions based on the findings from this study.

Empowering women economically and educationally has potential for improving their willingness to pay for maternal health care needs. This, we hope subsequently will improve their uptake and utilization of services without recourse to unorthodox health care services. The knowledge will make them aware of the importance and value of health care generally. By targeting interventions that improve the economic status of women and enhance their educational status, we expect to see improvement in their willingness to pay for health care especially maternal health care.

Willingness to pay for maternal care is associated with higher income, autonomy in taking decision for health care needs all of which are components or dimensions of empowerment.

Utilization of health care, is also largely determined by the WTP for the care, income and knowledge of the quality of services and the risks and dangers associated with non-utilization. These factors are all ingredients of empowerment, therefore, predictors of maternal services utilization.

The women saving groups are a form of a quick empowerment strategy and an avenue for accessing fast cash for women not into any regular employment, giving them the succour to obtain loans and pay for their health care requirements.

Recommendations

We recommend the following based on our findings to serve as guide for further research into the area of WTP and policy intervention in determining the prices of maternal services in order to improve utilization leading to reduction in maternal mortality.

The focus of this study has not been on all maternal services and therefore, there is need to expand the research further to comprehensively cover all aspects of maternal care. Special emphasis and attention needs to be given to PNC, which is the least utilized service

There is need to increase engagement with the religious leaders to improve utilization of services seeing the effect of religion from several studies in utilizing maternal services

Government needs to look at the feasibility of aiding the proliferation of women savings groups especially in rural areas, which are the abodes of women without the ability and willingness to access health care services. Information dissemination on

the complications of pregnancy through print and electronic media will help in discouraging home births and pull women to the health facilities

We also recommend behavioural research into the aspects of postnatal care to delve into the real unseen barriers that make its utilization dismal.

APPENDICES

Appendix A Household survey Questionnaire

Module 1. Household characteristics

H1	State	|_____|
H2	LGA name	
H3	Ward	
H4	Household no *Enter the household number*	|__|__|__|
H5	Interviewer initials	|__|__|__|
H6	Date *(dd/mm/yyyy,*	|__|__|/|__|
H7	Name of household head	|__|__|__|
H8	**Interviewer:** *Have you read him/her the consent form? (1) yes (2) no-one is available to read it to*	|__|
H9	**Interviewer:** *Does the respondent agree?(1)Yes (2) No* **IF NO END INTERVIEW HERE**	|__|
Now I want to ask you some questions about the characteristics of your household		
H10	What is the main material of the walls? *(1) Natural materials or no walls (millet stalks/ woven thatch/mud) (2)bamboo/Plywood/Stone with mud 3)Cement/bricks/planks (4) Other*	
H11	What is the main floor material? *(1)Natural floor (earth/sand/dung)* *(2)Rudimentary floor (wood/palm/bamboo)*	
H12	What is the main material of the roof: *(1) Iron sheets/ tiles/cement; (2) Thatch/mat/cardboard/grass; (3) Other*	
H13	What kind of toilet facilities does your household have?*(1) Flush toilet (2) Pit toilet/latrine (3) Bucket toilet (4) No facility/bush*	
H14	What is the main source of drinking water for members of your household? *(1)Piped water into dwelling; (2)Piped water into yard/plot;* *(3)Public tap; (4)Borehole; (5)Dug well; (6)Water from spring; (7)Tanker truck; (8)Surface water*	
H15	What type of fuel does your household mainly use for cooking *(1)Electricity; (2)Gas; (3)Kerosene;* *4)Charcoal;(5)Firewood/straw; (6)Dung; (7)Other*	
H16	Is the house connected to electricity? *(1) yes (2)no*	
H17	In this household is there anyone who owns the following:	*(1)yes (2)no*
a	Fridge	|__|
b	TV	|__|
c	Radio	|__|

d	Bicycle	|__|
e	Mobile phone	|__|
f	A bed	|__|
g	A kerosene lamp/pressure lamp	|__|
h	Wrist watch	|__|
i	Motorcycle	|__|
j	Generator	|__|
k	Fan	|__|
H18	In this house are there ducks or chickens? How many? (write the number; 0 if none, 999 if respondent does not know)	|__|__| |
H19	Do you have animals in this household like goat, sheep or cattle? How many?(write the number; 0 if none, 999 if does not know	|__|__| |
H20	Do you have any horses, donkeys or mules? How many? (write the number; 0 if none, 999 if respondent does not know)	| | | |
H21	How many mosquito nets does your household have? (Write total number; count those in use plus those not in use) If "0" SKIP TO W1	| | |

Module 2: WOMENS MODULE: (All resident women aged 15-49 years)

Interviewer: When you have identified the next woman for interview you must first complete the consent procedure (to W6) before proceeding with interview.

W1	***Name of the woman***	Membership of Mothers Group Yes (1) No (2)
W2	Marital Status Married (M) Single (S) Widow (W)	
W3	Age	
W4	Religion	
W5	***Interviewer:*** Is it possible to interview the woman? *1 = yes* ***(SKIP TO W5)*** *2 = No*	|__|
W6	***Interviewer:*** Why is it not possible to interview? *1=Temporarily absent – call back* *2 = Travelled away* *3 = Sick*	|__|
W7	***Interviewer*****:** Have you read her the consent form? *(1) yes (2) no*	|__|
W8	***Interviewer*****:** Does the woman agree? *(1)yes(2)no* **IF NO, END INTERVIEW HERE**	|__|

Now I would like to ask you some questions about the health care available to you

W9	Is there a primary health facility in your village? *(1)Yes (2)No*	| |
W10	How long does it take you to get to the nearest primary health facility? *Record the time in minutes.* **If she doesn't know, record 99**	|||
W11	By which means of transportation? *(1)walking (2)bicycle (3)motor vehicle (4) motorbike (5) donkey/horse cart*	| |
W12	How many times have you visited the primary health facility in the last six months? *Record the number of times:* **If any visits last 6 months, skip to w12**	| |
	IF NEVER IN THE LAST 6 MONTHS: What are the reasons why you have not visited the primary health facility in the last six months? **(do not read out list, prompt, 'anything else'; mark all that apply); then skip to w14)** (*1)yes (2)no*	
W12a	No illness in the family/no births :	| |
W12b	Facility is too far away :	| |
W12c	Costs too much money to go to health facility:	| |
W12d	Not enough time to visit:	| |
W14	The last time you visited the health facility, what was the primary reason?**Select one** *1 Family planning; 2 Child immunisation; 3 Antenatal care; 4 Delivery care; 5 Postpartum care; 6 Neonatal care; 7 Campaign; 8 Child health check; 9 Illness; 10 Collect commodity 11 Other*	| |

	Now I would like to ask you some questions about your health right	
W15	Have you ever been pregnant? (even if this did not lead to a live birth) *(1) Yes (2) No*	|__|
W16	Are you currently pregnant? **(Probe to make sure the respondent is giving you the correct answer)** *(1)Yes (2)No*	|_||_|/|_||_|/|_||_||_||_|
W17	Which number pregnancy is this? *(write number)*	
W18	What gestation are you now? (record no. weeks)	|
W19	Have you already received any care for your pregnancy so far this pregnancy? Probe: care at a health facility, or visits at home from a health volunteer (1)Yes (2)No	|__|
W20	Where do you plan to give birth this pregnancy? *(1)home (2)primary care health facility (3)hospital (secondary or higher level care) (4)don't yet know (5)other (specify)*	|__|
	Specify	|____|
W21	Can you tell me what are the problems in pregnancy that need medical help?**(don't read the list but probe: anything else?; mark all that apply)**	
a	Severe headache	|__|
b	Dizziness	|__|
c	Blurry vision	|__|
d	Reduced or absent fetal	|__|
e	High blood pressure:	|__|
f	Edema of the face/hands/legs**(Probe – swelling):**	|__|
g	Convulsions	| |
h	Excessive vaginal	| |
i	Severe lower abdominal	| |
j	Anemia/Pallor/Pale Skin	| |
k	Fever	| |
l	Other	| |
m	If other, specify	|__|
n	No problems mentioned	|__|
Now I want to ask you about your ability to read and or write		
W22	Can you read or write in English? Yes (1) No (2)	
W23	Can you read or write in any other language? Yes (1) No (2)	
W24	Can you read or write in any other language with understanding? Yes (1) No (2)	
W25	In which other language can you read or write best? Hausa……...1 Arabic……2	

Now I want to ask you about your employment status, monthly income and the role you play at home		
W26	Have you done any paid work either for yourself or for someone else in the last seven days? Yes (1) No (2)	
W27	Have you done any paid work either for yourself or for someone else in the last seven one month? Yes (1) No (2)	
W28	What do you do mainly for a living? (occupation)	
W29	How much is your average monthly income? (Enter figure in Naira)	N…… …… ……
W30	Who usually decides how the money you earn will be spent? you, your (husband/partner), you and your (husband/partner) jointly, or someone else? Respondent……..1 Husband/partner……..2 Respondent and husband/partner jointly…3 Someone else……..4 OTHER X (SPECIFY)	
W31	Who usually makes decisions about health care for yourself: you, your (husband/partner), you and your (husband/partner) jointly, or someone else? Respondent……..1 Husband/partner……..2 Respondent and husband/partner jointly…3 Someone else……..4 OTHER X (SPECIFY)	

Module 3: WILLINGNESS TO PAY FOR MATERNAL HEALTH AND NEWBORN HEALTH SERVICES

1. ANTENATAL CARE SERVICES (WTP1)

Q.	QUESTION	RESPONSE CODE
	READ TO CLIENT: The current average cost of antenatal care in a public health facility is about N700. Your total cost may be greater if other tests recommended by clinic personnel were performed.	
1	Did you pay the price posted above? (In previous pregnancy or if currently pregnant)	Yes 1 No 2
2	How much did you pay?	Amount: ----------
3	Will you be willing to pay that price when you get pregnant and go for ANC? (if not pregnant)	Yes 1 No 2
	READ TO CLIENT: I would now like to ask you some questions about your response to potential changes in the price of this antenatal care services fee. In answering these questions, please bear in mind the following: 1. Assume that your income will stay the same even if health facility prices change. 2. Alternatives do exist for health facility services.	
4	Suppose that the price of antenatal care increased byN200 to N900. Would you come to Health facility for you antenatal care if the price were N900?	Yes 1 No 2 Don't Know 99
5	Suppose that the price of antenatal care increased even further, by N300 to N1200. Would you come to facility for your antenatal care if the price were N1200?	Yes 1 No 2 Don't Know 99

6	Suppose that the price increase was less than the previous amount. Suppose the price of antenatal care increased to N1000. Would you come to the health facility for your antenatal care if the price were N1000?	Yes 1 No 2 Don't Know
7	What would be the highest price you would be willing to pay for antenatal care from the health facility?	Amount -----------
8	If health facility increased the price of antenatal care beyond what you were willing or able to pay, what would you do?	Go without service 1 Go somewhere else 2 I don't know
9	Where would you go? DO NOT READ CHOICES CODE ALL MENTIONED	Public Sector 1 Other NGO 2 Private Sector 3

2. DELIVERY IN THE FACILITY (WTP2)

Q.	QUESTION	RESPONSE CODE
	READ TO CLIENT: The current average price of a normal delivery in a health facility is N400.00. This total cost may have been greater if there were complications.	
1	Did you pay the price posted above? (During previous delivery)	Yes 1 No 2
2	How much did you pay?	Amount: _____
3	Why did you pay more/less than the posted price?	Reason: _____
	READ TO CLIENT: I would now like to ask you some questions about your response to potential changes in the price of this fee charged. In answering these questions, please bear in mind the following: 1. Assume that your income will stay the same even if Health Facility prices change. 2. Alternatives do exist for Health Facility services.	
4	Suppose that the price of delivery in health facility increased by N200 to N600. Would you go to the health facility to give birth if the price were	Yes 1 No 2 Don't Know 99
5	Suppose that the price of delivery in health facility increased even further— by N300 to N900. At this price would you go to the health facility for delivery if the price were N900?	Yes 1 No 2 Don't Know 99
6	Suppose that the price increase was less than the previous amount. Suppose the price of a delivery in a facility increased by to N700. Would you go to the health facility for delivery if the price were N700?	Yes 1 No 2 Don't Know 99
7	What would be the highest price you would be willing to pay for delivery services from the health facility?	Amount _____

8	If the health facility increased the price of delivery services beyond what you were willing or able to pay, what would you do?	Go without service 1 Go somewhere else 2
9	Where would you go? **DO NOT READ CHOICES CODE ALL MENTIONED**	Public Sector 1 Other NGO 2 Private Sector 3 Pharmacy 4 Other: specify…… I don't know 99

3. POST NATAL CARE SERVICES (WTP3)

Q.	QUESTION	RESPONSE CODE
	READ TO CLIENT: The current cost of post natal care in a public health facility is about free. However, some costs may be incurred if other tests recommended by clinic personnel were performed.	
1	Did you pay any price for above? (In previous pregnancy or if recently gave birth)	Yes 1 No 2
2	How much did you pay?	Amount: _____
3	Will you be willing to pay that price when you deliver and go for post natal care?	Yes 1 No 2
	READ TO CLIENT: I would now like to ask you some questions about your response to potential changes in the price of this postnatal care services fee. In answering these questions, please bear in mind the following:1. Assume that your income will stay the same even if health facility prices change. 2. Alternatives do exist for health facility services.	
4	Suppose that the price of post natal care was introduced at N200 per visit. Would you come to the Health facility for you post natal care if the price were N200?	Yes 1 No 2 Don't Know 99
5	Suppose that the price of postnatal care increased even further, by N300 to N500. Would you come to facility for your postnatal care if the price were N500?	Yes 1 No 2 Don't Know 99
6	Suppose that the price increase was less than the previous amount. Suppose the price of postnatal care increased to N300. Would you come to the health facility for your postnatal care if the price were N300?	Yes 1 No 2 Don't Know 99

7	What would be the highest price you would be willing to pay for postnatal care from the health facility?	Amount _____
8	If the health facility increased the price of postnatal care beyond what you were willing or able to pay, what would you do?	Go without service 1 Go somewhere else 2 I don't know 99
9	**Where would you go?** **DO NOT READ CHOICES CODE ALL MENTIONED**	**Public Sector** **1** **Other NGO** **2** **Private Sector** **3** **Pharmacy** **4** **Other: specify** **88** **I don't know** **99**

Appendix B Consent Form

Consent Form

QUESTIONNAIRE IDENTIFICATION NUMBER |___|___|___|

Date of visit: _____ Interviewer name: _____
Zone_____ State: _____

LGA: _____ Ward: _____
Mothers Group name: _____ Date: _____

Instructions

Approach the client and confirm if she belongs to the Mothers Group or not. Ask whether he or she is willing to answer a couple of questions for the survey. Find a space that offers some privacy (clients may be unwilling to talk with you if other people are around). Explain that you are interested in improving the quality and utilization of maternal and child services by the women members of the community members and their comments will be used only for that purpose.

Introduction: My name is..... ..... I am working for on a research that will assess the willingness to pay for maternal and child health services by women members of the community who are participating in women savings groups known as Mothers Groups.

Confidentiality and consent: I am going to ask you questions some of which may be personal. Your answers are completely confidential. Your name will not be

written on this form, and will never be used in connection with any of the information you tell me. You may need to know that this exercise is taking place in 2 LGAs and 6 political wards of the state. Your honest answers to these questions will help us improve health services provided especially for maternal and child health. We would greatly appreciate your help in responding to this survey.

Signature.....

(Signature of interviewer - certifying that informed consent has been given verbally by respondent)

THANK THE RESPONDENT FOR THE COOPERATION GIVEN.

TIME FINISHED:_____

TIME TAKEN TO FINISH THIS QUESTIONNAIRE IN MINUTES: _____

Appendix C Focus Group Discussion Questions

Focus Group Discussion Guide for Mothers Group members participating in the savings and loans scheme

TIME STARTED _____

Warm -up and explanation

A. Introduction

Welcome participants.

Describe what the focus group is- a group discussion forum that allows you to discuss among yourselves the topic rather than talking to us.

B. Purpose

A research is been done to assess the impact of women empowerment schemes that involves groups of women coming together to do weekly savings. They will in turn be eligible to access small loans for income generating activities. The study wants to find out what the concept of the women is on empowerment, what are the challenges and barriers they encounter in utilization of maternal services and what will be their willingness to pay for these services once empowered economically. Also note that all comments both positive and negative are welcome. All information will be treated in confidence. Participation is voluntary and you may opt out at any time.

Please feel free to disagree with one another. We would like to have many points of views.

(I WOULD WANT YOU TO DISCUSS ALL THE ISSUES AMONG YOURSELVES)

(Explain use of audiotape) we also want to ask for your permission to use the audio tape. All comments are confidential and are for research purposes only. I will also want you to speak one at a time so that the tape recorder can pick your voice appropriately.

c. Self-Introduction

(Ask each participant) Tell us your first name and something about yourself

Ice breaker: How does it feel seeing a woman die from a pregnancy related complication that can be prevented?

INSTRUCTIONS TO MODERATOR:

1. What do you think about the condition of women in the villages from the time they get pregnant to the time they give birth?

Probe:

- How do they access health care in the facilities around them?
- Do they think attending health facilities for ANC, giving birth under skilled personnel and postnatal care as important to their health? What do you think are

the causes of delay in seeking health care and are there critical issues preventing women from visiting health facilities?

2. Most women in our villages depend on their husbands for everything. Do you consider this as a lack of empowerment of the women?

Probe:

- What do they understand by empowerment?
- Will voluntary saving be of benefit to them even without income or additional support?
- Is literacy considered important and source of empowerment to them?

3. If a woman saves her hard-earned resources and eventually gets a loan to start business, what will be her priorities when she gets profit?

Probe:

- Is there guarantee that the husband will not receive the profit or determine what it should be used for?

4. If a woman gets pregnant while doing the savings and suddenly start seeing her feet swelling, will she use part of the profit to pay and get to the nearest health facility?

Probe:

- If her transport and medication will exhaust all her profit
- If there is bleeding and she is asked to pay more than 3 months saving
- Will she give birth at home or go the facility?

5. What does she do when her husband does not give her permission to visit the health centre?
6. Do you think women will have better future and be involved in household decision making when she has a stable income? Probe
    - How involved women are in household decisions
    - How they will get the support of their husbands
    - How they intend to cater for the education and health of their children when income increases?
    - What role the community and Government will play to change their status?

Any other comments or suggestions?

7. If the Mothers Groups prove successful in transforming the lives of women, what will be your advice to women in disadvantaged and poor communities around you? Probe

- Group savings scheme acceptability and practicability
- Challenges in implementation
- Women's vision of their roles in society when empowered

Any other comments or suggestions?

THANK THE RESPONDENT FOR THE COOPERATION GIVEN.

Appendix D Ethical Approval Letter

SECRET

GOMBE STATE OF NIGERIA
MINISTRY OF HEALTH HEADQUARTERS

All correspondence to be:
Addressed to the Hon: Commissioner

State Secretariat
P.M.B 042
Gombe State.
072-220244

OUR REF; MOH/ADM/S/658/VOL.11/37

Date: 04/07/2016

Muhammad Basheer Yahaya

JB 13, Doma Street,

Jekadafari Ward, Specialist Hospital

Road, Gombe

ETHICAL CLEARANCE TO CONDUCT BASELINE /MIDLINE SURVEY ON THE WILLINGNESS OF WOMEN GROUP MEMBERS TO UTILIZE AND PAY FOR MATERNAL SERVICES IN TWO (2) LGAs OF GOMBE STATE.

This is to inform you that, the request for approval with regards to the protocol For the above subject matter has been reviewed and granted approval

This approval is from 04/07/2016 to 03/07/2017. No activity related to this research May be allowed outside of these dates.

Please comply with the institutional guidelines and tenets of the code for Health Research.

Pharm. Titunuwa S,Dogonbaya

FOR HONOURABLE COMMISSIONER

REFERENCES

Adhikari, R. J. B. w. s. h. (2016). Effect of Women's autonomy on maternal health service utilization in Nepal: a cross sectional study. *16*(1), 26.

Adinma, E. D., Brian, D. A. J. I., Obionu, C. C., & Asuzu, M. C. (2011). Effect of government-community healthcare co-financing on maternal and child healthcare in Nigeria. *West Afr J Med, 30*(1), 35-41.

Adogu, P. O., Egenti, B. N., Ubajaka, C., Onwasigwe, C., & Nnebue, C. C. (2014). Utilization of maternal health services in urban and rural communities of Anambra State, Nigeria. *Niger J Med, 23*(1), 61-69.

Aizuddin, A. N., Sulong, S., & Aljunid, S. M. (2012). *Factors influencing willingness to pay for healthcare.* Paper presented at the BMC Public Health.

Alberini, A., Boyle, K., & Welsh, M. (2003). Analysis of contingent valuation data with multiple bids and response options allowing respondents to express uncertainty. *Journal of Environmental Economics and Management, 45*(1), 40-62.

Arrow, K. J. (2001). *Valuing environmental preferences: theory and practice of the contingent valuation method in the US, EU, and developing countries*: Oxford University Press on Demand.

Ataguba, J., Ichoku, E. H., Fonta, W., Okpanachi, A., & Okon, U. (2006). *An estimation of the willingness to pay for community healthcare risk-sharing prepayment scheme and the medical poverty trap: evidence from rural Nigeria.* Paper presented at the 5th poverty and economic policy (PEP) research network general meeting. South Africa: University of Cape Town.

Avan, B. I., Berhanu, D., Umar, N., Wickremasinghe, D., & Schellenberg, J. (2016). District decision-making for health in low-income settings: a feasibility study of a data-informed platform for health in India, Nigeria and Ethiopia. *Health policy and planning, 31*(suppl_2), ii3-ii11.

Babalola, S., & Fatusi, A. (2009). Determinants of use of maternal health services in Nigeria--looking beyond individual and household factors. *BMC Pregnancy Childbirth, 9*, 43. doi:10.1186/1471-2393-9-43

Bala, M. V., Mauskopf, J. A., & Wood, L. L. (1999). Willingness to pay as a measure of health benefits. *Pharmacoeconomics, 15*(1), 9-18.

Barner, J. C., Mason, H. L., & Murray, M. D. (1999). Assessment of asthma patients' willingness to pay for and give time to an asthma self-management program. *Clinical Therapeutics, 21*(5), 878-894. doi:https://doi.org/10.1016/S0149-2918(99)80009-5

Basaza, R., Alier, P. K., Kirabira, P., Ogubi, D., & Lako, R. L. L. (2017). Willingness to pay for National Health Insurance Fund among public servants in Juba City, South Sudan: a contingent evaluation. *Int J Equity Health, 16*(1), 158. doi:10.1186/s12939-017-0650-7

Bateman, I. J., Langford, I. H., Jones, A. P., & Kerr, G. N. (2001). Bound and path effects in double and triple bounded dichotomous choice contingent valuation. *Resource and Energy Economics, 23*(3), 191-213.

Baumgärtner, S., Drupp, M. A., Meya, J. N., Munz, J. M., & Quaas, M. F. (2017). Income inequality and willingness to pay for environmental public goods. *Journal of Environmental Economics and Management, 85*(Supplement C), 35-61. doi:https://doi.org/10.1016/j.jeem.2017.04.005

Berendsen, J., Bonifacio, C., van Gemert-Schriks, M., van Loveren, C., Verrips, E., & Duijster, D. (2017). Parents' willingness to invest in their children's oral health. *J Public Health Dent*. doi:10.1111/jphd.12242

Bock, J. O., Hajek, A., Brenner, H., Saum, K. U., Matschinger, H., Haefeli, W. E., . . . Konig, H. H. (2017). A Longitudinal Investigation of Willingness to Pay for Health Insurance in Germany. *Health Serv Res, 52*(3), 1099-1117. doi:10.1111/1475-6773.12522

Borges, A. P., Reis, A., & Anjos, J. (2017). Willingness to pay for other individuals' healthcare expenditures. *Public Health, 144*, 64-69. doi:https://doi.org/10.1016/j.puhe.2016.11.013

Bovill, M., Gruppetta, M., Cadet-James, Y., Clarke, M., Bonevski, B., & Gould, G. S. (2017). Wula (Voices) of Aboriginal women on barriers to accepting smoking cessation support during pregnancy: Findings from a qualitative study. *Women and Birth*. doi:https://doi.org/10.1016/j.wombi.2017.06.006

Breidert, C., Hahsler, M., & Reutterer, T. (2006). A review of methods for measuring willingness-to-pay. *Innovative Marketing, 2*(4), 8-32.

Calvès, A.-E. (2009). Empowerment: The history of a key concept in contemporary development discourse. *Revue Tiers Monde*(4), 735-749.

Cameron, J., & Cameron, S. (2006). The economic benefits of increased literacy. *Background paper prepared for the*.

Cameron, T. A., & Quiggin, J. (1994). Estimation using contingent valuation data from a" dichotomous choice with follow-up" questionnaire. *Journal of Environmental Economics and Management, 27*(3), 218-234.

Carson, R. T. (2000). Contingent valuation: a user's guide. In: ACS Publications.

Carson, R. T., Flores, N. E., & Meade, N. F. (2001). Contingent valuation: controversies and evidence. *Environmental and resource economics, 19*(2), 173-210.

Caughey, A. B., Washington, A. E., Gildengorin, V., & Kuppermann, M. (2004). Assessment of demand for prenatal diagnostic testing using willingness to pay. *Obstetrics & Gynecology, 103*(3), 539-545.

Chang, J., Savage, S. J., & Waldman, D. M. (2017). Estimating Willingness to Pay for Online Health Services with Discrete-Choice Experiments. *Appl Health Econ Health Policy, 15*(4), 491-500. doi:10.1007/s40258-017-0316-z

Chatterjee, C., Triplett, R., Johnson, C. K., & Ahmed, P. (2017). Willingness to pay for safe drinking water: A contingent valuation study in Jacksonville, FL. *J Environ Manage, 203*(Pt 1), 413-421. doi:10.1016/j.jenvman.2017.08.008

Cho Min, N., Lertmaharit, S., Kamol-Ratanakul, P., & Saul, A. J. (2000). Ex post and ex ante willingness to pay (WTP) for the ICT Malaria Pf/Pv test kit in Myanmar. *Southeast Asian J Trop Med Public Health, 31*(1), 104-111.

Cookson, R. (2003). Willingness to pay methods in health care: a sceptical view. *Health Economics, 12*(11), 891-894.

Corso, P. S., Hammitt, J. K., Graham, J. D., Dicker, R. C., & Goldie, S. J. (2002). Assessing preferences for prevention versus treatment using willingness to pay. *Med Decis Making, 22*(5 Suppl), S92-101.

Cummings, R. G., Brookshire, D. S., & Schulze, W. D. (1986). Valuing public goods: an assessment of the contingent valuation method. *Totowa, NJ: Rowman and Allenheld*.

Daltio, C. S., Attux, C., & Ferraz, M. B. (2017). Willingness to Pay in Caregivers of Patients Affected by Schizophrenia. *J Ment Health Policy Econ, 20*(1), 3-10.

De Allegri, M., Ridde, V., Louis, V. R., Sarker, M., Tiendrebéogo, J., Yé, M., . . . Jahn, A. (2011). Determinants of utilisation of maternal care services after the reduction of user fees: A case study from rural Burkina Faso. *Health Policy, 99*(3), 210-218. doi:https://doi.org/10.1016/j.healthpol.2010.10.010

Doctor, H. V., Bairagi, R., Findley, S. E., Helleringer, S., & Dahiru, T. (2011). Northern Nigeria maternal, newborn and child health programme: selected analyses from population-based baseline survey. *Open Demogr J, 4*, 11-21.

Donaldson, C., Jones, A. M., Mapp, T. J., & Olson, J. A. (1998). Limited dependent variables in willingness to pay studies: applications in health care. *Applied Economics, 30*(5), 667-677.

Donaldson, C., Shackley, P., & Abdalla, M. (1997). Using willingness to pay to value close substitutes: carrier screening for cystic fibrosis revisited. *Health Economics, 6*(2), 145-159.

Dong, H., Kouyate, B., Snow, R., Mugisha, F., & Sauerborn, R. (2003). Gender's effect on willingness-to-pay for community-based insurance in Burkina Faso. *Health Policy, 64*(2), 153-162. doi:https://doi.org/10.1016/S0168-8510(02)00144-6

Dong, H., Kouyate, B., Snow, R., Mugisha, F., & Sauerborn, R. (2003). Gender's effect on willingness-to-pay for community-based insurance in Burkina Faso. *Health Policy, 64*(2), 153-162.

Drummond, M. F., Sculpher, M. J., Claxton, K., Stoddart, G. L., & Torrance, G. W. (2015). *Methods for the economic evaluation of health care programmes*: Oxford university press.

Eliopoulos, G. M., Shardell, M., Harris, A. D., El-Kamary, S. S., Furuno, J. P., Miller, R. R., & Perencevich, E. N. (2007). Statistical Analysis and Application of Quasi Experiments to Antimicrobial Resistance Intervention Studies. *Clinical Infectious Diseases, 45*(7), 901-907. doi:10.1086/521255

EMMA McINTOSH, P. M. C., EMMA J. FREW, JORDAN J. LOUVIERE. (2010). *Applied Methods of Cost-Benefit Analysis in Health Care*.

Farlex, P. (2009). Medical Dictionary. *Farlex and Partners, United Kingdom*.

Fawsitt, C. G., Bourke, J., Greene, R. A., McElroy, B., Krucien, N., Murphy, R., & Lutomski, J. E. (2017). What do women want? Valuing women's preferences and estimating demand for alternative models of maternity care using a discrete choice experiment. *Health Policy*. doi:https://doi.org/10.1016/j.healthpol.2017.09.013

Foreit, K. G., & Foreit, J. R. (2001). Willingness to pay surveys for setting prices for reproductive health products and services: a users manual.

Frew, E. (2010). *Applied methods of cost-benefit analysis in health care* (Vol. 4): Oxford University Press.

Frew, E., Wolstenholme, J., & Whynes, D. (2001). Willingness-to-pay for colorectal cancer screening. *European journal of cancer, 37*(14), 1746-1751.

Fujita, Y., Fujii, A., Furukawa, S., & Ogawa, T. J. J. r. (2005). Estimation of willingness-to-pay (WTP) for water and sanitation services through contingent valuation method (CVM): A case study in Iquitos City, The Republic of Peru. *11*(March), 59-87.

Gartoulla, P., Liabsuetrakul, T., & Pradhan, N. (2010). Change in willingness to pay for normal delivery and caesarean section during pregnancy and after delivery in Kathmandu. *Trop Med Int Health, 15*(10), 1227-1234. doi:10.1111/j.1365-3156.2010.02596.x

Gerein, N., Green, A., Mirzoev, T., & Pearson, S. (2009). Health System Impacts on Maternal and Child Health. In J. Ehiri (Ed.), *Maternal and Child Health: Global Challenges, Programs, and Policies* (pp. 83-97). Boston, MA: Springer US.

Gingrich, C. D., Ricotta, E., Kahwa, A., Kahabuka, C., & Koenker, H. (2017). Demand and willingness-to-pay for bed nets in Tanzania: results from a choice experiment. *Malar J, 16*(1), 285. doi:10.1186/s12936-017-1929-2

Habibov, N., Cheung, A., & Auchynnikava, A. (2017). Does social trust increase willingness to pay taxes to improve public healthcare? Cross-sectional cross-

country instrumental variable analysis. *Soc Sci Med, 189*, 25-34. doi:10.1016/j.socscimed.2017.07.023

Hanemann, M., Loomis, J., & Kanninen, B. (1991). Statistical efficiency of double-bounded dichotomous choice contingent valuation. *American journal of agricultural economics, 73*(4), 1255-1263.

Health, G. S. M. o. (2010). *Gombe State Strategic Health Development Plan 2010 - 2015*.

Herold, D. K. (2010). Patient willingness to pay for a kidney for transplantation. *American Journal of Transplantation, 10*(6), 1394-1400.

Herold, D. K. J. A. J. o. T. (2010). Patient willingness to pay for a kidney for transplantation. *10*(6), 1394-1400.

Herrera-Ballesteros, V. H., Zuniga, J., Moreno, I., Gomez, B., & Roa-Rodriguez, R. (2017). [Quitting smoking and willingness to pay for cessation in Panama]. *Salud Publica Mex, 59Suppl 1*(Suppl 1), 54-62. doi:10.21149/7727

Kantachote, K., Mallick, A., Polster, R., & Roets, K. (2013). *Indicators of Women's empowerment in developing nations.* Paper presented at the Workshop in International Public Affairs.

Kawaguchi, L., Fouad, N. A., Chiang, C., Elshair, I. H., Abdou, N. M., El Banna, S. R., & Aoyama, A. (2014). Dimensions of women's empowerment and their influence on the utilization of maternal health services in an Egyptian village: a multivariate analysis. *Nagoya J Med Sci, 76*(1-2), 161-171.

Khalid, S. (2017). Social Preferences and the Willingness to Pay for Preventative Health Care: Evidence from Field Experiments.

Khan, N. (2002). The use of" contingent valuation method" for valuing medical services.

Kim, M. O., Lee, K. S., Kim, J. H., & Joo, J. S. (2011). Willingness to pay for hospice care using the contingent valuation method. *Yonsei Med J, 52*(3), 510-521. doi:10.3349/ymj.2011.52.3.510

Kyokan, M., Whitney-Long, M., Kuteh, M., & Raven, J. (2016). Community-based birth waiting homes in Northern Sierra Leone: Factors influencing women's use.

Midwifery, 39(Supplement C), 49-56. doi:https://doi.org/10.1016/j.midw.2016.04.013

Lofgren, C., Thanh, N. X., Chuc, N. T., Emmelin, A., & Lindholm, L. (2008). People's willingness to pay for health insurance in rural Vietnam. *Cost Eff Resour Alloc, 6*, 16. doi:10.1186/1478-7547-6-16

Macro, I., & Commission, N. P. (2014). Nigeria demographic and health survey 2013.

Malik, K. (2014). *Human development report 2014: Sustaining human progress: Reducing vulnerabilities and building resilience*: United Nations Development Programme, New York.

Marchant, T. (2013). Maternal and newborn health care. Baseline findings from Gombe State, Nigeria. Interactions between families and frontline workers (their frequency, quality, and equity), and coverage of interventions for mothers and newborns. *Project Report*.

Marchant, T. (2016). *Changes in maternal and newborn health care in Gombe State, Nigeria*.

Marchant, T., & Schellenberg, J. (2013). Measuring skilled attendance at birth using linked household, health facility, and health worker surveys in Ethiopia, North-East Nigeria, and Uttar Pradesh, India.

Martín-Fernández, J., del Cura-González, M. I., Rodríguez-Martínez, G., Ariza-Cardiel, G., Zamora, J., Gómez-Gascón, T., . . . Beamud-Lagos, M. (2013). Economic valuation of health care services in public health systems: a study about Willingness to Pay (WTP) for nursing consultations. *PLoS One, 8*(4), e62840.

Mason, J. M., Chalmers, J. R., Godec, T., Nunn, A. J., Kirtschig, G., Wojnarowska, F., . . . Williams, H. C. (2017). Doxycycline compared to prednisolone therapy for patients with bullous pemphigoid: cost-effectiveness analysis of the BLISTER trial. *Br J Dermatol*. doi:10.1111/bjd.16006

Mbachu, C., Okoli, C., Onwujekwe, O., & Enabulele, F. (2017). Willingness to pay for antiretroviral drugs among HIV and AIDS clients in south-east Nigeria. *Health Expect*. doi:10.1111/hex.12612

Nguyen, P. H., Hoang, M. V., Hajeebhoy, N., Tran, L. M., Le, C. H., Menon, P., & Rawat, R. (2015). Maternal willingness to pay for infant and young child nutrition

counseling services in Vietnam. *Glob Health Action, 8*, 28001. doi:10.3402/gha.v8.28001

Nord, E. (2017). Beyond QALYs: Multi-criteria based estimation of maximum willingness to pay for health technologies. *Eur J Health Econ*. doi:10.1007/s10198-017-0882-x

Nwakoby, B. N. (1994). Use of obstetric services in rural Nigeria. *Journal of the Royal Society of Health, 114*(3), 132-136.

Ochonma, O. G., & Onwujekwe, O. E. (2017). Patients' willingness to pay for the treatment of tuberculosis in Nigeria: exploring own use and altruism. *Int J Equity Health, 16*(1), 74. doi:10.1186/s12939-017-0574-2

Onwujekwe, O. E., Shu, E. N., Nwagbo, D., Akpala, C. O., & Okonkwo, P. O. (1998). Willingness to pay for community-based ivermectin distribution: a study of three onchocerciasis-endemic communities in Nigeria. *Trop Med Int Health, 3*(10), 802-808.

Orobaton, N., Austin, A. M., Abegunde, D., Ibrahim, M., Mohammed, Z., Abdul-Azeez, J., . . . Beal, K. (2016). Scaling-up the use of sulfadoxine-pyrimethamine for the preventive treatment of malaria in pregnancy: results and lessons on scalability, costs and programme impact from three local government areas in Sokoto State, Nigeria. *Malar J, 15*(1), 533. doi:10.1186/s12936-016-1578-x

Osubor, K., Fatusi, A. O., & Chiwuzie, J. (2006). Maternal health-seeking behavior and associated factors in a rural Nigerian community. *Maternal and child health journal, 10*(2), 159.

Parkhurst, J. O., Penn-Kekana, L., Blaauw, D., Balabanova, D., Danishevski, K., Rahman, S. A., . . . Ssengooba, F. (2005). Health systems factors influencing maternal health services: a four-country comparison. *Health Policy, 73*(2), 127-138. doi:https://doi.org/10.1016/j.healthpol.2004.11.001

Partners, F. a. (Ed.) (2009) Medical Dictionary.

Pavel, M. S., Chakrabarty, S., & Gow, J. J. B. h. s. r. (2015). Assessing willingness to pay for health care quality improvements. *15*(1), 43.

Pinto, S. L., Holiday-Goodman, M., Black, C. D., & Lesch, D. (2009). Identifying factors that affect patients' willingness to pay for inhaled insulin. *Research in Social and Administrative Pharmacy, 5*(3), 253-261.

Quayyum, Z., Khan, M. N., Quayyum, T., Nasreen, H. E., Chowdhury, M., & Ensor, T. (2013). "Can community level interventions have an impact on equity and utilization of maternal health care" - evidence from rural Bangladesh. *Int J Equity Health, 12*, 22. doi:10.1186/1475-9276-12-22

Rasch, A., Hodek, J. M., Runge, C., & Greiner, W. (2009). Determinants of willingness to pay for a new therapy in a sample of menopausal-aged women. *Pharmacoeconomics, 27*(8), 693-704. doi:10.2165/11312740-000000000-00000

Ready, R. C., Buzby, J. C., & Hu, D. (1996). Differences between continuous and discrete contingent value estimates. *Land Economics*, 397-411.

Russell, S. (1996). Ability to pay for health care: concepts and evidence. *Health policy and planning, 11*(3), 219-237.

Ryan, M., Ratcliffe, J., & Tucker, J. (1997). Using willingness to pay to value alternative models of antenatal care. *Social Science & Medicine, 44*(3), 371-380. doi:https://doi.org/10.1016/S0277-9536(96)00154-2

Sabermahani, A., Mohammad Taghizade, S., & Goodarzi, R. (2017). A Comparative Study on Willingness to Pay for Breast Cancer and Osteoporosis Screening in Kerman, Southeastern Iran. *Iran J Public Health, 46*(5), 693-698.

Say, L., & Raine, R. (2007). A systematic review of inequalities in the use of maternal health care in developing countries: examining the scale of the problem and the importance of context. *Bulletin of the World Health Organization, 85*, 812-819.

Schellenberg, J. (2012). Evidence to improve maternal and newborn health in Ethiopia, North-Eastern Nigeria and Uttar Pradesh, India. *Presentation slides*.

Schellenberg, J., & Avan, B. (2012). Data Informed Platform for Health Feasibility Study Report, Gombe State, Nigeria.

Sculpher, M. J., & O'Brien, B. J. (2000). Income effects of reduced health and health effects of reduced income: implications for health-state valuation. *Med Decis Making, 20*(2), 207-215. doi:10.1177/0272989x0002000206

Sharma, J., & Parthasarathy, S. K. (2007). *Examining Self Help Groups: Empowerment, Poverty Alleviation, Education, A Qualitative Study*: Nirantar.

Sharma, J., Soma K. Partha, Archana, Diwivedi, . (2007). Examining self help groups: Empowerment, Poverty Alleviation, Education. A Qualitative Study.

Shih, H. C., Chou, P., Chen, S. J., Liu, J. H., Lee, F. L., Liu, C. M., & Tung, T. H. (2007). A community-based study of the willingness to pay associated with screening for diabetic retinopathy among type 2 diabetes in Kinmen, Taiwan. *J Epidemiol, 17*(6), 186-193.

Shogren, J. F., Shin, S. Y., Hayes, D. J., & Kliebenstein, J. B. (1994). Resolving differences in willingness to pay and willingness to accept. *The American Economic Review*, 255-270.

Silwal, A. R. (2003). Repayment performance of Nepali village banks. *Unpublished Master Dissertation. Swarthmore College, Swarthmore*.

Singh, P. K., Rai, R. K., Alagarajan, M., & Singh, L. (2012). Determinants of maternity care services utilization among married adolescents in rural India. *PLoS One, 7*(2), e31666. doi:10.1371/journal.pone.0031666

Sipsma, H., Callands, T. A., Bradley, E., Harris, B., Johnson, B., & Hansen, N. B. (2013). Healthcare utilisation and empowerment among women in Liberia. *J Epidemiol Community Health*, jech-2013-202647.

Sueki, H. (2017). Impact of educational intervention on willingness-to-pay for suicide prevention: a quasi-experimental study among university students in Japan. *Psychol Health Med*, 1-9. doi:10.1080/13548506.2017.1371777

Sund, B., & Svensson, M. (2017). Estimating a constant WTP for a QALY-a mission impossible? *Eur J Health Econ*. doi:10.1007/s10198-017-0929-z

Tadesse, M., Teklie, H., Yazew, G., & Gebreselassie, T. (2013). Women's Empowerment as a Determinant of Contraceptive use in Ethiopia Further Analysis of the 2011 Ethiopia Demographic and Health Survey. *DHS Further Analysis Reports, 82*.

Tao, F., Huang, K., Long, X., Tolhurst, R., & Raven, J. (2011). Low postnatal care rates in two rural counties in Anhui Province, China: Perceptions of key stakeholders. *Midwifery, 27*(5), 707-715. doi:https://doi.org/10.1016/j.midw.2009.10.001

Tarekegn, S. M., Lieberman, L. S., & Giedraitis, V. (2014). Determinants of maternal health service utilization in Ethiopia: analysis of the 2011 Ethiopian Demographic and Health Survey. *BMC Pregnancy Childbirth, 14*, 161. doi:10.1186/1471-2393-14-161

Ternent, L., McNamee, P., Newlands, D., Belemsaga, D., Gbangou, A., & Cross, S. (2010). Willingness to pay for maternal health outcomes: are women willing to pay more than men? *Appl Health Econ Health Policy, 8*(2), 99-109. doi:10.2165/11313960-000000000-00000

Tey, N.-P., & Lai, S.-l. (2013). Correlates of and barriers to the utilization of health services for delivery in South Asia and Sub-Saharan Africa. *The Scientific World Journal, 2013*.

Tsawe, M., & Susuman, A. S. J. B. r. n. (2014). Determinants of access to and use of maternal health care services in the Eastern Cape, South Africa: a quantitative and qualitative investigation. *7*(1), 723.

Vernazza, C. R., Wildman, J. R., Steele, J. G., Whitworth, J. M., Walls, A. W., Perry, R., . . . Donaldson, C. (2015). Factors affecting patient valuations of caries prevention: Using and validating the willingness to pay method. *J Dent, 43*(8), 981-988. doi:10.1016/j.jdent.2015.05.009

Vian, T., White, E. E., Biemba, G., Mataka, K., Scott, N. J. J. o. m., & health, w. s. (2017). Willingness to pay for a maternity waiting home stay in Zambia. *62*(2), 155-162.

White, H., & Sabarwal, S. (2014). Quasi-experimental design and methods. *Methodological Briefs: Impact Evaluation, 8*, 1-16.

Whynes, D. K., Frew, E. J., & Wolstenholme, J. L. (2005). Willingness-to-pay and demand curves: a comparison of results obtained using different elicitation formats. *International journal of health care finance and economics, 5*(4), 369-386.

Wiesemann, A., Mueller-Buehl, U., Scheidt, R., Boehme, W., & Scheuermann, W. (2004). Patient willingness to pay for preventive measures in primary care: a study of five GPs in a German community. *Sozial-und Präventivmedizin/Social and Preventive Medicine, 49*(4), 254-260.

Yar'Zever, I., & Said, I. (2013). Knowledge and barriers in utilization of maternal health care services in Kano state, Northern Nigeria. *Eur J Biol Med Sci Res, 1*(1), 1-14.

Yasunaga, H., Ide, H., Imamura, T., & Ohe, K. (2006). Analysis of factors affecting willingness to pay for cardiovascular disease-related medical services. *Int Heart J, 47*(2), 273-286.

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