2018

Effect of Quality Health Care and Support Network on Maternal and Children Outcome in Uganda

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Thesis Submission for the Master of Science Degree

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May 2018

Abstract: *About 300,000 women mostly of developing countries die due to pregnancy-related birth complications every year (Smith & Rodriguez. 2015). In Uganda, the maternal death is 1 in every 44 women (State of the World's Mothers' Index 2015, by Save the Children). This places the country as 141 out of 179 by the same ranking. Existing data attributes this anomaly mainly to lack of prompt obstetrics services (Wilunda et al, 2015). Thus, this paper presents empirical evidence of the effect of quality health care and support network on the outcome of a mother and her children during maternity. We employed survey to estimate the before and after delivery effect in health facilities across two districts in Uganda. We explored the intervention of Saving mother giving Life (SMGL) to reducing maternal mortality rate: as a measure of quality health care. Our results show that compared to other healthcare, mothers who received antenatal care from any SMGL health facilities are 0.306 points less likely to suffer from Postpartum Depression and 0.975 points more likely to have life satisfaction after delivery.*

1 Introduction

Irrespective of her previous birth experience, each period a new mother "labors" through pregnancy; the role comes with its new specific dimension (Rubin (1984). The process of this new dimension that bonds the woman to her child is gradual, systematic and rigorous (Rubin 1984). And at this crucial period of a woman's life, the outcome can either be good or bad; regard on the treatments she receives. In other words, "transformation to motherhood involves heavy task on such human activities, physical health, psychological state, level of independence, social relationships and personal beliefs" (Barclay et al. 1996). These activities may likely diminish during this period. However, many interventions all over the world geared towards helping the woman have a better outcome for herself and child during maternity. These interventions are enormous, especially in Africa. But in spite of all these efforts, the final indices still leave much to be desired.

The primary motivation of this study draws from my previous work experience as a member of a supervision team at a general hospital in my home country, Nigeria. I was working as a Local Government Area Officer, with the task of assessing the impact of health intervention programs. During a supervision exercise in March 2016, the local birth register showed that approximately three babies and one mother died in every seven births. This anomaly was primarily attributable to inadequate access and utilization of quality health care. Even in urgent cases like HIV/AIDS infection, proper healthcare is expected to be a vital determinant of a mother's wellbeing, as well as that of her baby (Lazarus, R., Struthers, H., & Violari, A. 2009).

Currently, the unacceptably high levels of maternal mortality rates are a frequent subject in global health and development discussions. Over US$40 billion pledged towards a worldwide strategy for women's and child's health in 2010 (Arregoces et al. 2015). Again in 2016, the Ugandan Ministry of Health through its Bureau of Statistics (UBOS) published that as at 2011: maternal mortality rate recorded a decline from 438 deaths to 336 out of 100,000 live births. While infant mortality rates reduced from 54 to 43 deaths per 1000 live births, child mortality[1]

[1] *Child mortality is the probability of a child dying between the age of one and five years. It is express as death/1000 children surviving up to one year. Infant mortality is the probability of a baby dying between birth and one year.*

rates also recorded a decline from 38 to 22 deaths per 1000 live births. Even though these are significant results in maternal health, but the life of every mother and child also matters.

Estimates have it that there are strong specific country and global contributions towards obstetrics services to improve maternal outcomes. About 303,000 women die worldwide due to avoidable pregnancy-related causes (WHO 2015). Out of these figures, Sub-Saharan Africa alone accounts for about 201,000 maternal deaths, while all the developed regions account for about 1700 deaths. Besides, the lifetime risk of maternal death in Sub-Saharan Africa is 1 in 41, while it 1 in 3,300 women in the developed regions (WHO 2015). Available records have shown that in Uganda alone, a mother has 1 in 44 chances of dying during maternity and these deaths are to no small extent avoidable.

To alleviate some of the problems identified particularly in government health facilities[2] in Africa: individuals, organizations, and governments globally have contributed hugely to maternal healthcare reforms and interventions. The result is approximately a 44% reduction in maternal mortality rate worldwide by 2015[3]. Moreover, this reduction only recorded in places where there are interventions to prevent pregnancy/birth complications as specified by the Millennium Development Goals. It is then to say if a country prevents pregnancy/birth complications; it has a "Quality Maternal Healthcare services."

In any case, there is need to explore the available resources to create ways in which more can be done to improve healthcare delivery services. The African continent naturally possesses a culture of rich support network. Would this already existing cultural heritage in conjunction or supplementary with healthcare interventions improve the general well-being of mothers and their children during maternity? The answer is that wellbeing during pregnancy correlates with the maternal outcome (Collins et al. 1993). One of the ways which mothers can attain this positive well-being is when you expose them to increasing number of good support network. Besides, support network, another empirical question this paper investigates is "whether mothers who patronize the services of Traditional Birth Attendants (TBAs) in Uganda showed better signs of increased maternal well-being; compared to those exposed to SMGL intervention? This investigation is because a good percentage of these mothers, irrespective of whether they have access to a health facility, patronize the services of the TBAs. Thus, it becomes imperative to ascertain whether the effort of TBAs presents a pro or con. The primary aim of this literature is to advocate for healthcare interventions especially in Africa to take

[2] http://www.who.int/pmnch/topics/maternal/app_maternal_health_english.pdf World Health Organization (WHO) provided a lot of insights in this web account indicating the key barriers and the robust ways forward in maternal health in African. It also estimates that mother has a "75% survival rate if you prevent pregnancy and birth complications during maternity."

[3] http://www.who.int/pmnch/topics/maternal/app_maternal_health_english.pdf

advantage of the already existing culture of the enormous support network to address the lapses of maternal health care management.

Even though there have been extensive literary efforts in this area of study, our concern is focused on the dimensionality of health care interventions concerning support network to enhance development. We conducted a semi-experiment in Uganda using a survey to consider all the different possible estimations.

Our result is in line with our proposed hypothesis that the complementary relationship between quality obstetrics services and psychosocial influence creates a positive outcome on maternity and its various consequences. Based on the global trend to achieve quality maternal health care, we controlled for pregnancy and birth complication in our analysis. We also control for other confounding factors that can influence maternal outcomes. The final result is that mothers who received quality health care from SMGL facilities are more likely to live a satisfied life and less likely to come down with postpartum depression after delivery. Also, if the mother has the support of the people in her "circle of influence" like her partner, mother, friends, neighbors, etc.; there is an improvement in these outcomes. Another impressive result is that their children are also more likely to show signs of better health 24 months after delivery. Thus, in line with our conclusion, we propose a way forward for policies in maternal health.

2 Literature Review

This paper joins in the new paradigm shift towards the fourth and fifth MDG goals. The objective is to determine: "Whether there is a significant effect on the life of a woman and her children during maternity if she has access to quality healthcare and systematically exposed to the support of her families, friends, community, etc.?"

This new "paradigm shift" hopes to inform the allocation of maternal healthcare interventions especially in Africa. It will also help to reduce maternal mortality rate further. Maternal death is defined by (Shah and Say 2007) as "the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy. This death may be from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes".

Moreover, studies have shown that Uganda is one of the most challenging places for mothers to live and raise their children, and this is mainly due to poor maternal health care services

(Kyomuhendo, G. 2003). Having a raw estimate of the magnitude of the problem; Uganda's maternal mortality rates is 430 deaths per 100,000[4]Live births (UNICEF 2008-2012).

More so, the fertility rate (ages 15–44) is 49.9 per 1000 women; which is about 6.7 children per woman (Uganda 2006). The annual growth rate is 3.2 percent. These estimates make Uganda the third highest growing population in the whole world (Uganda 2006). Despite these, unfortunately only about 47% of Ugandan women receive up to 4 antenatal care coverage, and about 42% of births, are attended to by skilled health personnel (Atuyambe et al. 2008). We substantiate the argument provided in (Bukenya and Muhumuza. 2017) that during this study, we find that infrastructures are inadequately maintained and mostly in a state of despair. This consequence leads to say that, healthcare provision in Uganda are highly underfunded and highly variable in quality. And also, because the number of qualified staff for primary health care was generally inadequate, some of the professional health care services in local facilities are being performed by unqualified employees, such as ward maids and dressers (Okello et al. 1998). In other words, human resources and service delivery are better in facilities where there are NGO interventions. And their workers including doctors are better rewarded and more motivated (Okello et al. 1998).

As a result of these anomalies, facilities which receive better funds have a higher stake, and these lead to a system of "cost sharing" whereby hospitals must charge for treatments (Wandera et al. 2015).

The result is that most Ugandans pays for health care when they get sick without any insurance (Parkhurst et al. 2005). Because this care from the hospital is expensive, they turn to alternative sources of medicine which is cheaper (Wildavsky 1977). As a result, this may lead to situations where pregnant women, who have minor illnesses like malaria, may delay treatment because of the cost and the possibility of cheaper alternatives. In the end, complications may occur which will lead to increase in hospital expenses, other more severe illness, or even death. The different individual choices towards healthcare place the very poor at a disadvantage, especially considering they also face additional challenges such as poor hygiene, deficiency in nutrition, and in general: child, maternal and reproductive health challenges.

[4] *According to WHO, maternal mortality ratio is the number of maternal death (as a result of direct and indirect cause) in every 100,000 live births while maternal mortality rate is the number maternal death (as a result of direct or indirect causes) in every 100,000 women of childbearing age Fertility rate is the number of births /1000 women between the ages of 15 to 44. Also, maternal death is the number of fatalities/women (age 15 to 44) in a given area.*

2.1 Global Maternal health

Different works of literature have diverse views on the progress made so far towards this area of health globally. To summarize the results: a lot has been done, and the task ahead is enormous (Shah and Say 2007)

Moreover, it should be of concern that thirty years after the launch of the Safe Motherhood campaign in India in 1987 (Say & Raine 2007), half a million women, most of developing countries' origin, die from maternal related causes yearly (Lawn et al. 2005).

The trend is that countries with a high maternal mortality ratio of over 750 deaths per 100,000 live births usually correlates with high fertility, unplanned pregnancies, limited health resources and poor service delivery (Shah and Say 2007).

Contrarily, the global pattern has been that of a consistent decline in maternal mortality rates by an average of 3.1% annually between 1990 and 2010; the decline accelerated starting from the year 2000 (Smith, S., & Rodriguez). Some literature argues that the reduction is modest, especially with sub-Saharan Africa pulling down the average of the total outcome like (Alkema et al. 2016.). It is fair to say that a global decline in the ratio: from 385 deaths per 100,000 births in 1990 to 216 deaths in 2015 (Alkema et al. 2016) is reasonable. Also, a maternal death of about 500,000 in 1980; before the creation of millennium development goals (MDG) to about 300,000 in 2010 (Smith & Rodriguez 2015), is also a reasonable improvement.

2.2 African Maternal Health

Looking at how Africa has fared in the estimates over the years, the results are the reason why there are a lot of interventions ongoing at the moments. MMR for example in Nigeria and Uganda are 814 and 343 deaths per 100,000 births, respectively (Dungan 2008). Comparing this figure with the USA, which is 14.5 and estimated among the worst in the developed countries (Johnson et al. 2011), puts Africa in a dire situation. Moreover, according to (UNICEF 2017) asserts that the measure of lifetime risk for maternal death is the probability that a 15-year-old girl will die from complications due to childbirth over her lifetime. In 2015, the lifetime risk of maternal death in low-income countries as a whole was 1 in 41, compared to 1 in 3,300 in high-income countries (Bongaarts 2016). Nevertheless, in developing countries, due to the evolving social, economic trends and their way of life (Santow & Bracher 2001), a mother's transformation to motherhood seems more distressful and, in most cases, may cause her a lot of misery (Barclay & Lloyd 1996). Apart from the changes in the pattern of social, economic trends, another possible reason for the stress during the transition to motherhood is because; unlike Africa, there is a significant reduction in the capacity of support accorded to maternal health care generally (Ronsen and Sundstrom 2002).

Bill and Belinda Gates Foundation funded an evaluation to determine the progress made on the Millennium Development Goal 5 (ie Improve maternal health). This evaluation demonstrates the improvement in maternal health care (Hogan, M., Foreman, K., Naghavi, M., Ahn, S., Wang, M., & Makela, S. et al. 2010). The result of the study showed that a significant and varied improvement achieved towards the MDG5, and 75% reduction in MMRs achieved in 2015. Nevertheless, only 23 countries contributed to this fit which includes Egypt, China, Ecuador, and Bolivia, etc.

In any case, the situation is not hopeless, and if both public and private institutions correctly implement necessary health-care interventions, a significant stride we can make towards mothers dying from pregnancy-related causes. The solution may be attainable by improving delivering options and increase skilled health attendants.

2.3 Uganda maternal Health

This research is an effort to extend the frontiers of the existing pieces of literature on the subject matter; "Does access to quality healthcare and maternal network impact on the outcome of the mother and her children in Uganda."

One of the major issues underlying Uganda maternal health is the human resources and skilled attendance systems. In general, maternal health care relies on the entire health system, which includes the public-private mix of service delivery, and the broad changes that are involved in the health sector reforms (Parkhurst et al. 2005).

For example, the Ugandan maternal death put in perspective shows the following estimates as the direct and indirect causes[5] of death (Mbonye et al. 2007):

[5] Reports from different studies show that birth or pregnancy complications which arise from the direct and indirect causes of death as listed above, accounts for more than three quarters of maternal deaths (Mpembeni et al., 2007). As Outlined by MDG5: providing preventive measures can reduce maternal death up to 75%. Interventions by private and public organizations have been working tirelessly towards the provisions of such actions since the creation of MDG goals.

Direct Causes of Maternal Death	
Hemorrhage	42.3 %
Obstructed Labor	22.2
Complications During Abortion	11.1 %
Ruptured Uterus	9.9%
Indirect Causes of Maternity Death	
Malaria	65.5 %
Anemia	19.3 %
HIV/AIDS	12.8 %

As part of the effort to reduce maternal death in developing countries, the Ministry of health in Iraq in 2013, strategically adopted the services of Traditional Birth Attendants (TBAs) to reach the "hard to reach" mothers (Shoo et el, 2015). TBAs are usually mature women in the society who attend to deliveries but often consulted for other maternal health issues. Moreover, evidence has shown that TBAs can prevent some perinatal deaths if well prepared. Similarly, in Northern Uganda, the same strategy was used during the religious uprising of the Lord's Resistance Army (LRA). By 2006 the war had displaced about 1.5 million people into internal displacement camps. This displacement created a significant constraint in the provision of especially maternal health care services. The situation was becoming challenging, and there was limited capacity to respond to the emerging issues. Again, TBAs were used to address some of the maternity issues. In another scenario during the outbreak of Ebola, this same TBA strategy worked by recognizing their efforts and roles. Thus, they received compensation for making some referrals to public health facilities. They were also formally trained in appropriate skills and the utilization of a "TBAs to Health facilities referral system." Unfortunately, today the strategy has changed, TBAs has continued to grow in strength and out of reach; taking advantages of the dilapidating health care system in Uganda (Izubgara 2008). This growth led to a situation where homebirths; one of the most persisting maternal care challenges has been on the rise (Izubgara 2008). The argument is whether to encourage or discourage TBAs.

Another major issue underlying Uganda's maternal health care is the individual country contexts, which also determine the majority of the factors that influence maternal health outcomes and service performance (Walt et al., 2008). These issues were found to affect: the access to and utilization of services, quality of care provided, and ultimately maternal health outcomes (Parkhurst et al. 2005). Statistics show that the wealthy districts get more favored in Uganda and unfortunately the NGOs and other non-profit agencies are unable to reach a high percentage of the poor. In addition to the conditions, there is a rapid growth to the external design of these donor agencies which may not account for the individual country mix. Therefore, there is a lack of a long-term financing plan from these agencies which can hinder integration into the local health system and ownership. To sustain and possibly scale up any early gains from these initiatives may require longer-term commitments and a clear plan for transition to the national control (Kruk et al. 2014). Thus, we propose a need for alternative strategies such as local insurance scheme or adopting a system that considers African cultural heritage in support network. This alternative will encourage partnership with the existing local structure. It will also proffer lasting solution to a more inclusive and sustainable maternal health care delivery. However, this solution must be considered irrespective of income cadre and must be robust enough to last beyond the short-term NGO interventions.

2.4 Maternal Health Outcome on The Child

The spillover effects of maternal death on children who are left behind could be overwhelming. For instance, an Ethiopia longitudinal study found that babies who experienced the loss of a mother, are 46 times more likely to die within their first 30 days compared to those whose mothers survived, (Finlay et al. 2015). A similar result found in a study from rural Tanzania, which indicates that children orphaned by early maternal death have a 48% chance of being lost to infant mortality when compared to 6% for those whose mothers survived (Finlay et al. 2015). Based on these statistics, the far-reaching impacts of maternal death can extend to other family members. For children in China, it is important to note that the loss of their mother affects their school performances (Zhou et al. 2016). And for the husband, he experiences a lot of hard times working it alone (Zhou et al. 2016). As a compliment to access to quality health, social support can impact on the health outcome of the mother and her children during prenatal stage (Collins et al. 1993). These outcomes measured regarding childbirth weight, Apgar scores, labor progress and postpartum depression. The result is that as levels of support increases, the rate at which women will exhibit better labor progress, have healthier babies regarding birth weight, and less postpartum depression also increases (Collins et al. 1993). Furthermore, studies have shown that the index child health progress correlates with the mother's level of

postpartum depression (Patel, Rahman, Jacob & Hughes, 2004). Instances show that in areas where there is gender bias regarding births like in Africa and South Asia: mothers usually come down with postpartum depression when you criticize or blamed them heavily for giving birth to a female child (Patel, Rahman, Jacob & Hughes, 2004). There is always a spill effect on the index child as a consequence of the aftermath of postpartum depression. Accounts have it that most of the times, the child fails to thrive in long-term cognitive and emotional behaviors, especially in the high-income areas. Physical well-being and survival rate are mostly affected in low-income regions (Patel, Rahman, Jacob & Hughes, 2004).

2.5 Maternal Health Outcome on The Mother

Hope granted in the book "Social epidemiology" which revealed an interesting aspect of healthcare delivery. Through different structural conditions, support networks can influence various health outcome when we consider psychosocial mechanism (Lisa Berkman et al. 2000). Fortunately, it is a consolation to Africa in general since it has a culture of an enormous support network, especially during maternity. Ugandan health care system is improving presently, and it is one of the countries in Africa with a vast support network, the addition of this social integration to the health care system can help to offset a lot of pressure.

Maternal role defined as a mother's self-awareness concerning her gradual transformation into motherhood (Elizabeth 2009; Rubin 1984). Social relationships play a significant role in shaping the quality of lives, especially during this period of change to motherhood (Marmot and Wilkinson 2003). "Once mammals perceived any physical or psychological stress, the adrenal glands activate the hypothalamic-pituitary axis. Next, the steroid hormone, cortisol is also released from the adrenal gland" (Moscovice, 2013 & reviewed in Sapolsky, 2002)). "Individual-level stress index can be measured by the levels of cortisol in saliva, blood, and feces. In the short run, the human body responds by releasing energy. This process can inhibit such human metabolisms like digestion and reproduction. On the other hand, in the long-term or when the release of the cortisol is chronic, the result is such negative outcomes like hypertension, immune and/or reproductive suppression and even death" (Moscovice, 2013 & Sapolsky, 2002).

However, this study is a measure of general wellbeing and how it can influence the health outcome during maternity. The estimate is that 10% of new mothers may come down with postpartum depression (Collins et al. 1993). This depression usually may occur from the different equilibrium of how a mother faired through the stages of pregnancy. In line with

various studies' results, we believe that the number may be more in the developing countries where many women do not seek proper maternal health care treatment (Barclay & Lloyd 1996). But in the opinion of some doctors; most patients may not be physically sick, that the best medicine is reassurance (Wildavsky 1977). African mothers may not have access to the best of health care system, but they have a massive support network.

So, for clarity and going with the trend of public health (WHO,2017) we used prenatal care (ANC) as care provided during pregnancy and before delivery, whereas postnatal (PNC) is care after birth up to 40 weeks received by a mother during maternity. This routine expects that mothers should attain up to 8 antenatal care services. This services will help to reduce deaths up to 8 per 1000 births when compared to a minimum of four visits during maternity (WHO 2017).

2.6 Antenatal care schedule (WHO 2017)

Routine visits	Gestation (week)
1. visit	12
2.visit (routine ultrasound)	20
3. visit	26
4. visit	30
5. visit	34
6. visit	36
7. visit	38
8. visit	40

Expectations of pregnancy and delivery should be a happy outcome, but unfortunately, it comes with much more stress for both the mother and the child. Therefore, support during this period would provide need-based assistance for the new mother and her new baby. This support enhances her general wellbeing and allows her more control of invading challenges during this period (Collins et al. 1993). In effect, she will perceive pregnancy related changes as less stressful (Collins et al. 1993, Norbeck & Anderson, 1989; Tietjen & Bradley, 1985). Based on this hope, the outcome will lead to reduced rates of stress induced by biochemical interaction (Pagel, Smilkstein, Regen, & Montano, 1990), while also capable of lowering stress-related habits like smoking and alcoholism. Informational support regarding antenatal care includes: right nutrition, good health-care practices, preparation for labor and delivery should be explored intensively (Collins et al. 1993, Aaronson, 1989; Burnes-Boltonn, 1988; Zweig, LeFevre, & Kruse, 1988).

Thus, our vivid review of empirical efforts on the subject matter paves the way for us to situate this research in a way that extends the frontiers of the existing literature. This project, therefore, studied how support networks and access to quality healthcare affect maternal and children outcomes in Uganda.

3 Data and Measures

3.1 Description of Health Care Services in Uganda

Health care services in Uganda are generally underfunded, thus leading to minimal and inefficient provision. When there are no interventions, mothers giving birth are at very high risk.

The primary sources of this risk attributed to:

- Lack of timely access to proper essential maternal health care services
- Inadequate treatment of mothers during health care services by medical personnel
- Limited reproductive health care literacy
- Reliance on traditional medicine
- Malaria, and prevalence of HIV/AIDS.

Several local interventions by both the public and private sectors aimed at significantly curbing the dangers facing mothers giving birth. In addition to surviving childbirth, mothers face other complications if postnatal care is not available. Studies from the Harvard T.H. Chan School of Public Health indicate that one in four women experience depression before birth, while one in

five will experience postpartum depression. The result is negative consequences for the mother and her children.

As an alternative to perceived better health care services, mothers seek the services of Traditional Birth Attendants (TBAs)

3.2 Description of SMGL Healthcare services

To proffer a lasting solution to the reoccurring issues facing maternal health in the sub-Saharan African, this paper looks at the outcome of a mother and her children if she has access to prompt obstetrics services and systematically exposed to the support of her family, friends, community, etc. Accordingly, we collaborated with Saving Mother Giving Life (SMGL) intervention in Uganda.

"Saving Mothers Giving Life is a public-private partnership, launched by the former US Secretary of State, Hillary Clinton in 2012" (Saving Mothers Giving Life, 2017). Its main goal is to dramatically decrease the rate of maternal and newborn deaths in Uganda, Nigeria, and Zambia, by reducing maternal mortality Rates (MMR) up to 55%. To achieve this goal, SMGL improves the health care system, by providing the services of high-quality skilled birth attendance, emergency obstetric services, and neonatal care. Its objective is to test an integrated health care systems approach that addresses the "three delays" associated with maternal and newborn deaths at a community-based level. The "three delays" as specified by SMGL are

"Delays in seeking appropriate care":

Through community-based group like the Village Health Teams (VHTs)[6], Mama Ambassadors amongst others, SMGL has maintained steady linkages with the community to provide integrated health care services and enlighten pregnant women and their families and on how best to utilize the services provided at the health facilities. "Delay in reaching care promptly":

Through a referral-based system, the intervention has made provisions through different avenues (e.g., local transport) to make sure that mothers have prompt access to care, especially during complications and emergencies.

[6] The VHTs and Mama Ambassador are community-based groups, who volunteer to engage their local expertise to steer the community's maternal health care forward in Uganda. In Kibaale, VHTs are more motivated to be the key determinants towards community surveillance, community mobilization, and increasing community ownership of SMGL programs. Their activities are generally more effective in districts that have SMGL interventions.

"Delay in receiving high-quality care at a health facility":

Apart from the regular training of all healthcare unit, SMGL employed obstetrician to live in remote communities and provide professional services free of charge whenever required. It also has a data collection unit to inform about outcome and way forward.

The result is that since the inception of the program in 2012, the maternal mortality rate has declined by 44%

We analysis the intervention of SMGL as the treatment variable and compared its effect on wellbeing with other health care services including that of Traditional Birth Attendant (TBA). The primary explanatory variable in this literature is "Access to quality healthcare". Quality healthcare during maternity can be summarized thus: attending at least four antenatal care visits, receiving tetanus injection and other routine medications, assistance if there is any pregnancy or birth complications, birth assistance and also attending routine immunization for babies. In most instances during maternity, it is safer and more practical to start and complete maternal care in a particular health facility. Even though there are some exceptional cases, the standard practice is to go through the process in a specific clinic. Thus, in our study, all the subjects are assumed to have started and finished the process in their various healthcare units. This assumption also helps to control for exogenous variations in our study. Assistance during birth delivery is an estimate of our main explanatory variable. The estimate is a dummy variable that turns on when the birth assistance is from an SMGL health facility.

4 Sample and Procedure

4.1 Sample

To consider how to adopt a system of support network and its measurement in this study, we consulted (Breza 2015). The challenges and the best way forward outlined below.

First, there is endogeneity: the spillover and peer effects are usually difficult to measure. This difficulty may be because individuals who are connected, may have similar characteristics and also exposed to the same shock. To control for this, we use an identification strategy that considered the Stable Unit treatment value assumption (SUTVA) (Rubin 1978). Thus, the assumption we recognized in the paper by our sampling method.

Secondly, network-based survey requires individual detailed data; therefore, individual households, irrespective of the distance from civility, must be reached. This comprehensive data will help to solidify the internal validity of the study.

Lastly, the spillover effect must be controlled for by eliciting the network connection from a well-defined treatment and control group. Thus, sample each of the group networks

individually. This way, spillover effect can be estimated by looking at the difference between: for example, husband of the treated and husband of the control.

This study we implemented in two districts in Uganda, after approval from the ethical review board at the Makerere University, School of Public health, Uganda. Going with Breza 2015), we divided the participants into treatment and control groups. The treatment group is mothers who attend SMGL health care services in Kibaale district. Kibaale is one of the six districts in the Western part of Uganda where the intervention of Saving mother giving life is currently ongoing.

The control group is mothers who receive health care services from any other health facilities in the second district: Mubende. These facilities as of the time of the study, have neither SMGL nor any other similar maternal health care interventions. Moreover, both study districts have identical demographics except for few languages differences. Kibaale has a population of 785,088. While Mubende has a population of 684,337

In total, participants were about 400. 300 out of them, were women in maternity. The remaining 100 were their husbands. All participants were voluntary and in their various homes, separate from their spouses. Maternal age ranged between 15 to 49 years, and there was no limits age for the fathers.

However, to controlled for selection bias and spillover effect, we identified these subjects in their individual health facilities' prenatal care (ANC) and postnatal care (PNC) registers.

Antenatal/prenatal care (ANC) means health care services before delivery and Postnatal (PNC) care means health care services after delivery.

Also, to consider the sampling of individual detailed household data in identifying these subjects Breza 2015), we went to the health facilities in both the treatment and control districts. From their antenatal care registers, we identified female subjects who are between 5-6months pregnant (ANC) and attended up to 2 ANC visits. We did the same for mothers who delivered 3-4 months ago(PNC) before the survey. They also must have attended up to 2 PNC visits. The selection of these subjects was random.

After the identification, we randomly generated a list of the subjects, including their addresses and phone numbers, for both ANC (N=200) and PNC (N=200). From the record, we either called the mothers (n=300) to make an appointment to visit them at home, or we went straight to their homes if we could not reach them on a mobile phone. That way, we surveyed them individually. We chose the sampling method to ensure that whatever effect or characteristics we estimate are endogenous to the subjects in each of the district. Also, if the husband (n=100) was at home at the moment, we surveyed him too. In Kibaale, all health facilities have SMGL intervention (n=200). Also, the sampling method helps to control for any exogenous variation

in determining the differences in the mean value of the treatment and the control. For the participants in Mubende however, we divided them into either TBA (n=100) subjects or other facilities that do not have SMGL interventions (n=100). Advertisement for the job of the enumerators arranged by the project supervisor Dr. Lynn Atuyemba in Makerere University. We executed the final selection of the enumerators based on their previous enumeration experience and knowledge of sample areas. Four were selected and trained on the questionnaires; two each for Kibaale and Mubende. In Kibaale the treatment districts, the (VHTs) helped to identify each of the subjects in their homes according to the lists of mothers we generated in the health facilities. This idea was possible because of the special relationship the mothers who are SMGL patients have with the VHTs. The opposite was the case for the other health facilities; because the VHTs were not motivated and there were no community linkages, we went through tough times locating the subjects. The tough times in Mubende once again indicates the extent the SMGL intervention impacts in the life of mothers during maternity in Kibaale

4.2 Maternal Support Network Scale

Studies have shown that strong psychosocial ties can lead to positive health outcomes and buffering against stress, which is more robust in women (Collins et al. 1993.) As one of our explanatory variables, strong maternal support network cited in many studies as one of the ways to buffer against stress during maternity. Postnatal depression as an attribute of social factors increases when there is less support from the people in the woman's circle of influence.

We utilized the 5-point Likert scale (Webster 2000) to estimate the smaller maternal support for each of the mothers in the treatment while controlling for districts. Fig 1 shows the sample of the scale which measures the psychosocial factors that impact on postnatal depression and mother's extent of satisfaction with life. The element like "There is a conflict with my partner" and "I feel controlled by my partner" were reversed following the precedence of (Webster 2000). The total score for the scale is 30, where higher score depicts increased support. Hence, figure 2 presents our modification of the 5-points Likert maternal support scale in fig1. The modified scale estimates a bigger maternal support network, in otherward reiterating that Africa is a system of huge support network. The main difference between the smaller and large support group mechanism is that in the larger scale, the subject exposed to the individual support of her husband, parents, in-laws, cousins, neighbors and also friends. Unlike that of the smaller support (5-point scale) which only considered the subject's family as a unit, her partner, and friends. The total score for the bigger scale is 25. And also, like the 5-point Likert scale, a higher score means an increase in support network. We used charts to show the contributions

of the individual's level of support for the people in the mother's circle of influence. Chart1 and chart2 show the level of support for both the smaller and bigger support groups respectively.

4.3 Edinburgh Postnatal Depression Scale (EPDS)

One of the primary purposes of this literature is to bring to fore the effect of Quality health care on the outcome of a mother if, at different levels of maternity (ANC and PNC), she receives support from the people who matter most in her life. One of the outcomes we tested is postpartum depression (PPD). We used the Edinburgh Postnatal depression scale (Webster 2000) to estimate the result on the mother in both the treatment and control districts: 3 to 4 months postpartum. The scale is a simple objective way of measuring postnatal depression. It is a 10-point, self-report question at the end of our survey instrument, designed to screen for maternal postpartum depression. According to (Webster 2000) "It is widely used and has been validated for use during pregnancy in several countries, including Australia."

4.4 Other Maternal Health Care Factors

In other to control for the expected value of the error term is zero for all observations {E (ei) = 0}, we included some factors that can influence the different outcomes of mothers during maternity. For the context of this study, in addition to control for endogeneity problems, we controlled for such factors that we assumed correlates with the outcome variables. These factors include the level of wealth (regarding the different household possessions like phone, televisions, truck, carts, etc.). Fig 3 is the part of the survey instrument we used to estimate the subjects' level of wealth. Another major factor that we also considered is the marital status: where a single (divorced) single (never married), single (surviving spouse) were all computed as single. While single (any of the above but living with boyfriend), married living together, married (living apart), I have more than one spouse, my partner has more than one spouse were all computed as married. Other significant factors were educational level, incidences of sickness and diseases like malaria and tuberculosis. Another main control variable is if a mother had complications during pregnancy. This variable is essential because it is what determines the level of quality healthcare by any intervention on maternal healthcare.

4.5 The Model 1 (OLS)

$$\text{Satisfaction with Life} = B_o + B_1\text{Treatment} + B_2\text{Maternal Support} + B[Z] + E$$

The outcome variable is "how satisfied you are with your life?" on a scale of 1-10. This scale estimates the effect of the variables "quality health" and "maternal support network" on the wellbeing of the mother regarding how satisfied she is with life. However, because different

studies interchange life satisfaction with depression during maternity (Barclay & Lloyd 1996), we provide different estimates for each of the outcomes.

4.6 Model 2 (OLS)

Possibility of depression = $B_o + B_1$Treatment + B_2Maternal Support + B[Z] + E

Using the Edinburg maternal depression scale, we estimate on a scale of 1-30 if a mother has a possibility of postpartum depression. A score of 10 and above shows an increased chance of postpartum depression, whereas a score below 10 depicts fewer chances of depression.

5 Analysis

We used frequencies, means, and standard deviations to estimate sample characteristics for the two districts. From our sample mean estimated values of the maternal support scale, we set the cut-off points for the levels of support in the two scales. In this paper and for the sake of clarity, we label the smaller scale: "Maternal Support Scale" and the bigger one, we label "Maternal Support Network." The cutoff points for the maternal support scale is 22.23762: where >22.23762 is huge support scale and <22.23762 is lower support. And for the maternal support network, the cutoff point is 10.70977, with a score >10.70977 depicting a huge support network, while <10.70977 is low support. A summary statistics table to show the differences in characteristics of treatment and control district we provided in Stat-Table1. Data analysis and estimates we performed using regression outputs in Stata. The level of significance is shown using the standard error estimates of the parameters. From the bar Graph1 and two before the regression analysis, we summarized the main variables like "Life Satisfaction" which is on a scale of one to ten. Subjects who are in the treatment district are on average 8 out of 10 times satisfied with life, and in control, they are 6 out of 10 times satisfied with life. We also summarize the outcome: possibility of postpartum and the distribution of the maternal support in the two districts.

6 Results

6.1 Does access to quality health care and support network effects maternal outcome?

We employ a simple OLS model to implement the regression analysis. We split the results to account for the different levels of maternal support (small or more significant). Table 1 shows the effect on the outcome; life satisfaction when a mother has access to any of SMGL clinics, and she systematically exposed to smaller support network like her husband and friends. Emphasis is also on the part of the scale that accounts for when there is a conflict with the partner. This emphasis is so because in our sample, "conflict with partner" has the third highest

score: 3.786 out of 5. This score is to say that the couples within our sample districts quarrel with each other more than the support they receive from their families and friends. The final result shows that SMGL treatment significantly increases mother's life satisfaction by 0.967-points when all other factors are kept constant. The maternal support scale has no significant effect even when it is high. If the subjects are married, we also saw 0.863-point increase in life satisfaction. Food income and "if there is health assistance to any birth complications" also increase the chances of life satisfaction significantly in Kibaale district. Higher income which we estimated using household possessions like television, animals, car, tractors, etc. also increases the chances of life satisfaction significantly. Higher education level like college has no significant impact on life satisfaction.

For the second table (table 2), the mother this time is systematically exposed to the maternal support network (more significant support). The same positive and highly considerable point chance increase in life satisfaction recorded if delivered in any of SMGL health facility. Moreover, the maternal support network also increases the chances of life satisfaction by 0.127 points at 5% significance level. When the maternal support network is high, increase in life satisfaction is even higher: 0.687 points at 1% significance level.

In Table 3 and 4, the Edinburg scale tested on quality health care and support network. In confirmation of results from existing works of literature, SMGL treatment decreases the probability of postpartum depression, and it is consistent throughout in both our result tables. Furthermore, in table3, we note that the maternal support scale (smaller scale) have no significant and consistent impact on the probability of a mother coming down with postpartum depression. But on the same note, if a mother ever experiences any birth complication, even if she got assistance from SMGL treatment, the chances of PPD is increased by 0.290, and it is highly significant at 1%. However, in table4, we see a great deal of hope. The maternal support network will decrease the chances of PPD by a little point: 0.0210. Besides, when you increase the strength of the support in the system, it is incredible to say that the chances of PPD will decrease by 0.130 point and significant at 5%. These results lead to a critical empirical assumption in maternal healthcare. This realistic assumption is to say that quality health alone cannot lead to the desired end of reaching the MDG5. Based on the vast evidence from works of literature, most interventions in Africa aimed at the prevention of complications that may occur during pregnancy or birth. Additionally, when this complication happens, it's management and assistance usually are mainly provided through obstetrics. However, studies have shown that negative wellbeing can also lead to death during maternity. The primary objective of this study is to bring to fore how maternal support network can improve outcomes during motherhood.

In addition to the regression analysis, we provide summary statistics to show the different characteristics of our sample district in both the treatment districts. Antenatal care visits show that mothers in Kibaale are 52% more likely to attend ANC while in Mubende, mothers are 45% more likely to participate in ANC visits. Also, estimates for postnatal care shows that mothers in Kibaale are 57% more likely to return for health care services after delivery, contrary to Mubende where the forecast is 51%. These estimates are not in line with (Kiwanuka et al. 2008; Kyomuhendo, 2003; Ndyomugyenyi et al., 1998). However, in both districts, their partners assist them four out five times (i.e., most of the times). The average age is about 26 years. The resulting consistency in this paper can be summarized thus: Africa blessed with a vast attribute of the support network, and its advantage we can employ in maternal health care interventions. Our resounding argument is that the differences in these estimates in the two districts can well attribute to the intervention of SMGL in Kibaale. Again, it is important to note that this is economic research; hence we do not employ techniques that are necessarily applied by medical professionals. Therefore, we cannot lay final claims that our subjects are diagnosed with Postpartum depression. Instead, we only estimate and present the point probability. Besides, Edinburgh postnatal depression scale is a screening instrument and not a diagnostic tool. Thus, the final claim of postpartum depression can only be ascertained by a medical expert.

6.2 Does access to quality health care and support network effects Children outcome?

Another important aspect of maternal health care is the outcome effect on the children. This effect mostly concerns the child whose life is the reason why there were maternal healthcare services in the first place. Several empirical evidence has shown that whatever the impact is on the mother spills over to the child in the long and short-term. But unfortunately, due to the limitations of this paper, our focus is on the short-term effects; that is periods within 24 months after delivery. The outcome variable is such that we asked the mothers "In general, how do you describe child's health?" From our results in table 5, the index child whose mother received antenatal care and delivered in any of SMGL health facilities has a 0.786-point probability of living healthier compared to those in the control group. This outcome is highly significant, keeping every other factor constant. However, when we added any other elements that portray an increase in wealth, the point probability reduced. This reduction in the point probability is in line with (Patel, Rahman, Jacob & Hughes, 2004), which accounts that the chances of improved physical health and survival of the index child are better when mothers in the low-income areas show more competence. Another impressive result is that even though support network

significantly increases the point estimates of child health by 0.0441; there is no significant effect with higher support. This measure seems to make sense because in general, infant most importantly needs the immediate care of the parents.

6.3 Robustness Check for Maternal Outcome

In this section, we ran a robustness check to verify that the impacts on "Life satisfaction" and the "possibility of postpartum depression" are exclusive as a result of the SMGL treatment in our sample. We modified the treatment variable furthermore. It includes all the mothers that ever-had birth or pregnancy complication "and" received healthcare exclusively from any SMGL health facility. We also coded this new variable as to turn off (be zero) when there is any form of birth or pregnancy complications, and the subjects received healthcare services from either TBA or other health clinics that have never received SMGL interventions. The downside of this is that it reduced our sample size even more: from around 200 to 98 subjects. We also observed some multicollinearity issues, and thus some of the control variables like level of education etc. were dropped off from the regression. From the final results in table 6 and 7, we observed that subjects who received assistance from any SMGL clinic during any birth complications have 1.047points chance more likely to be satisfied with life compared to mothers who received assistance from either TBA or other clinics. This outcome is significant at 10% level. Also, from the tables 8 and 9, we likewise observed that the impact on the possibility of postpartum depression is highly significant. The results are that mother who received assistance from any SMGL facilities are less likely to come down with PPD. These results are consistent with our previous results when mothers receive full quality health care from SMGL clinics. However, there are no significant impacts when we expose them to any of the maternal support. We think that the reason for "no the significant impact" when exposed to any maternal support should be because of the reduction in sample size. Furthermore, for more robustness check we interacted the two variables "assistance from SMGL during birth and pregnancy complication" and "maternal support" in tables 10, 11, 12 and 13. It is interesting to observe that the complementary relationship between the two variables has a highly significant impact on Life satisfaction. The interpretation of our final result is that; with an increase in maternal support network when a mother receives assistance in the case of any birth complication, that she has a 2.438-point probability of being more satisfied with life if she gets treatment from any SMGL clinic. However, it is essential also to note that the effect is lower if the support is more prominent but also enormous at 2.397. Both results are significant at 10% level. Although there is no significant impact on the possibility of postpartum depression with an increase in support, we believe otherwise with more substantial sample size.

7 Discussion Conclusion and Recommendation

On the course of this study in Uganda, we conducted a minor choice experiment. This experiment was to determine the individual family-based choices between the husband and the wife. We included gifts we assumed, in general, they accept as being either of the spouse's specific. To agree on the choice of gifts, we delved into a comprehensive consultation with the individuals (including husbands and wives who are not part of our sample) and stakeholders in maternal health in Kibaale and Mubende. The gifts included boxers (for men), sanitary pad, (Afripad: which is reusable up to 1 year for women) and detergents and washing soap (which we think is a general family choice gift). All the gifts are within the same price range (i.e., between 5000 to 6000 Ugandan shillings; i.e., about $1.43 to $1.71). We control for the possibility of spillover choices, by making sure that a spouse's decisions were in the absence of the partner. Based on the individual selection of gifts, the result of the experiment shows that; the husbands are more likely to take decisions that tends towards their wives. On the other hand, the wives are more like to make decisions that are typically towards the general family. This experiment informs on how interventions can approach to improve the maternal and children outcomes in Uganda. We recommend that based on the analysis; any intervention that sort to enhancing the woman's outcomes during this period should consider how best to use the husband to improve the expected result. If the predicted outcome is on the children, then the intervention can recognize the input of the mothers.

During our various field experience in maternal health, another essential aspect that usually affects these outcomes is information priming. How a community perceive an intervention or treatment goes a long way to influence how individual mothers wants to participate. Situations have arisen where minor "bad rumors" limited how successful a health program or campaign performed. For example, an uninformed mother once told a few of her mates, "that vaccines cause malaria in infants," surprisingly this reduced the vaccine utilization rates in the community. We have also seen a mother who with the help of her partner learned about the different stages of pregnancy and what to expect at each level. In the end, because she had the right information and right set of minds, she went through the process of pregnancy and delivery as a simple everyday routine. In Nigeria during antenatal care, healthcare units pass pregnancy expectation information during antenatal care sessions. The information priming session they call "Health Talk." To a large extent, mothers who are fully committed to these sessions fared better. Information/social priming experiments in maternal healthcare is an essential area of study that scholars can venture in.

This study will help to enlighten how the right information can improve outcomes during maternity

In our study sample, we think that the reason mothers fared better in Kibaale district is because the VHTs did well in their community linkages. The community to a large extent has the right information on how best to go about various health routine during this period. These best practices in the community also account for when there are pregnancy and birth complications. From our results, though our sample showed increased in chances of postpartum depression in the case of "any birth complications", but we witness a significant increase in life satisfaction.

Obstetrics can manage almost all pregnancy and birth complication, especially if the mother has the right information and she receives adequate, prompt care. Unfortunately, the attitude of healthcare providers significantly determines the extent of access and utilization of healthcare services during maternity. This assumption is the case since pregnancy and delivery come with a lot of physical and hormonal changes that are highly tasking on the mother. Thus, how the mother fairs at this period are significant.

The idea of support network in this study is to help control for social priming and the mother's attitude towards her self. The big picture is that the husband who according to our research, plays a significant role in the life of the partner's wellbeing should understand every detail of what the spouse goes through at this period. Additionally, it is imperative that he understands the implications if the wife comes down with the condition of postpartum depression after delivery. Our estimates also show that own mother, siblings, own fathers, friends, neighbors, even the in-laws contribute a lot to a mother's wellbeing. In many cases, these estimates portray typical African settings where friends, neighbors and family help to improve final maternal outcome. Therefore, interventions should consider social priming agents on the hierarchy of individual's support estimated in this paper in chart1 and chart 2.

Thus, our contribution to these existing works of literature is a mechanism that supports the success in obstetrics (Quality Healthcare) managed by individuals, organizations, and countries. This contribution is through a psychosocial mechanism (Support Network): where mothers will learn to accept pregnancy and motherhood wholeheartedly (Lederman & Weis 2009). They will also learn how to improve the relationship with husband, own mothers, and vice versa (Lederman & Weis 2009). Also, through this mechanism, mothers will learn how to prepare extensively for pregnancy, build high self-esteem and self-control (Lederman & Weis 2009).

Saving Mothers Giving Life (SMGL) in spite of all the challenges in Uganda maternal health has been able to reduce (MMRs) by 44% and improve various maternal health outcomes. Our literature proffers a complementary approach through which the results can improve further. It also seeks to support the global efforts towards improving maternal health and reduction of

maternal mortality rates (MDG5). The idea is to take advantage of an already existing social structure to reach every mother irrespective of income cadre, age, previous birth experience, location, etc. Moving forward, since our alternative hypothesis is right, we, therefore, propose a way forward for policymakers and interventions. Achieving this stride entails integrating the individual in the woman's circle of influence into maternal health care system. Informational support extended to these individuals is another essential approach this paper looks to recommend for policy. This approach in effect will surround the pregnant woman with the right kind of motivational information to go through this period which comes with a lot of uncertainties. The recommendation the policymakers can organize in a way that accounts for pregnancy-specific health care patterns which affect different women differently. For example, a single mother or a widow would require more attention at this time and so, therefore, any plan toward maternal health ought to account for such differentials. In other to corroborate this assumption, our results show that mothers who we identified as married showed a better probability of an improved outcome. These outcomes are significant and consistent throughout. Our final recommendation is that our empirical study will further help re-design strategies towards improving maternal outcomes, reduce the number of deaths and decline maternal mortality ratio further also.

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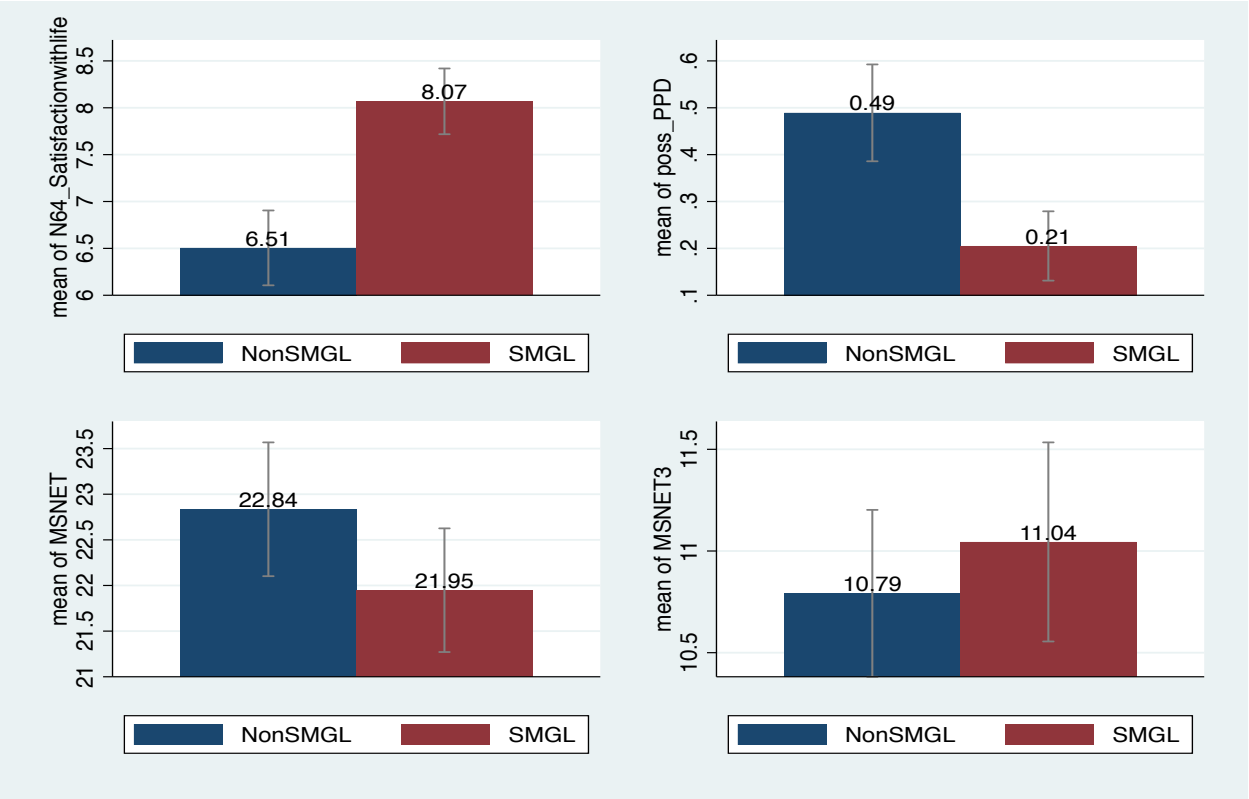
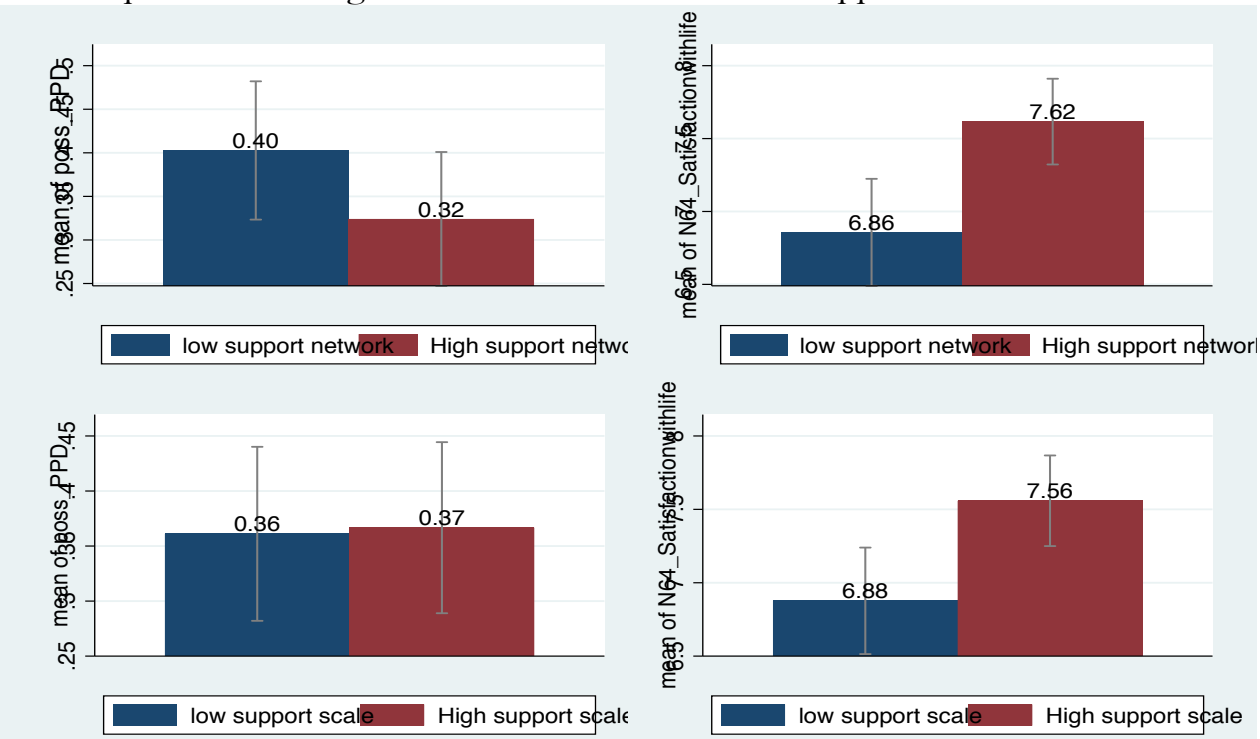
Appendix:

BarGraph1* Showing the Summary of Maternal Health Care in the Treatment and Control Districts



Bar Graph2** Showing the Variations of Maternal Support on The Maternal Outcomes



Graph showing variations of Support network on the maternal Outcomes

StatTable1* Summary Statistics showing the different characteristics of both the treatment and control districts

Variables	Kibaale (Treatment District)	Mubende (Control District)
Age	26.14 {5.705}	26.02 {6.102}
Marital status(married)	66% {0.477}	32% {0.469}
Prenatal care (ANC)	52% {0.509}	45% {0.498}
Postnatal care (PNC)	57% {0.499}	51% {0.502}
Satisfaction with life	8.01 {1.893 }	6.24 {1.952}
Possibility of Postpartum depression	20% {0.400}	56% {0.498}
Big Support Network	11.16 {2.833}	10.28 {1.95}
Small Support Network	21.88 {3.647}	22.5 {3.646}
Huge big sup_Network	56% {0.498}	40% {0.492}
Huge small sup_Network	51 {0.502}	49% {0.501}
Wealth	33.81 {1.52}	33.99 {1.886}
Education level	3.71 {0.872}	3.27 {0.97}

Table*1 Regression for Mother Experience with Life Satisfaction After Quality Healthcare and Exposed to Maternal Support Scale

VARIABLES	(1) Satisfaction	(2) Satisfaction	(3) Satisfaction	(4) Satisfaction	(5) Satisfaction	(6) Satisfaction	(7) Satisfaction	(8) Satisfaction	(9) Satisfaction	(10) Satisfaction	(11) Satisfaction
Assist if any birth complication	0.865***	0.803***	0.939***	0.833***	0.977***	0.977***	0.957***	1.038***	1.081***	0.967***	0.947***
	(0.281)	(0.294)	(0.301)	(0.311)	(0.313)	(0.313)	(0.316)	(0.316)	(0.310)	(0.310)	(0.303)
Delivery in SMGL Clinic		1.482***	1.437***	1.513***	1.079***	1.081***	1.078***	1.013***	0.825***	0.924***	0.967***
		(0.266)	(0.269)	(0.276)	(0.294)	(0.295)	(0.296)	(0.296)	(0.297)	(0.295)	(0.286)
Antenatal care (ANCPNC)			-0.0231	0.0280	0.0511	0.0478	0.0488	0.0326	-0.0109	0.0285	0.0949
			(0.268)	(0.276)	(0.273)	(0.274)	(0.276)	(0.274)	(0.270)	(0.267)	(0.261)
Maternal support scale				0.0524	0.0247	0.0250	0.0258	0.0214	-0.0112	-0.0203	
				(0.0376)	(0.0380)	(0.0382)	(0.0384)	(0.0381)	(0.0391)	(0.0391)	
Married					1.044***	1.038***	1.024***	1.040***	0.969***	0.951***	0.863***
					(0.292)	(0.295)	(0.297)	(0.295)	(0.290)	(0.287)	(0.287)
Age						0.00351	0.00445	0.00533	0.000825	-0.00131	0.000618
						(0.0229)	(0.0230)	(0.0228)	(0.0224)	(0.0222)	(0.0219)
college							0.828	0.887	0.964	0.934	0.895
							(1.111)	(1.103)	(1.083)	(1.066)	(1.060)
malaria								0.637*	0.572*	0.502	0.462
								(0.324)	(0.319)	(0.315)	(0.310)
foodincome									0.474***	0.400**	0.351**
									(0.163)	(0.165)	(0.165)
Index of Assets										1.044**	0.948**
										(0.425)	(0.420)
High Maternal support scale											0.217
											(0.291)
Constant	5.744***	5.172***	4.945***	3.874***	3.906***	3.811***	3.798***	3.275***	2.151*	2.898**	2.559**
	(0.497)	(0.525)	(0.545)	(0.955)	(0.956)	(1.140)	(1.145)	(1.167)	(1.209)	(1.255)	(1.050)
Observations	247	214	210	206	201	201	200	200	200	198	201
R-squared	0.037	0.167	0.173	0.180	0.235	0.235	0.235	0.251	0.282	0.313	0.312

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table**2 Regression for Mother Experience with Life Satisfaction After Quality Healthcare and Exposed to Maternal Support Network

VARIABLES	(1) Satisfaction	(2) Satisfaction	(3) Satisfaction	(4) Satisfaction	(5) Satisfaction	(6) Satisfaction	(7) Satisfaction	(8) Satisfaction	(9) Satisfaction	(10) Satisfaction	(11) Satisfaction
Assist if any birth complication	0.865***	0.803***	0.939***	0.944***	1.025***	1.025***	1.008***	1.095***	1.091***	0.978***	0.976***
	(0.281)	(0.294)	(0.301)	(0.301)	(0.303)	(0.304)	(0.306)	(0.306)	(0.300)	(0.303)	(0.298)
Delivery in SMGL Clinic		1.482***	1.437***	1.436***	1.043***	1.045***	1.040***	0.976***	0.842***	0.967***	0.975***
		(0.266)	(0.269)	(0.272)	(0.284)	(0.285)	(0.287)	(0.286)	(0.284)	(0.284)	(0.278)
Antenatal care (ANCPNC)			-0.0231	0.0937	0.142	0.137	0.137	0.136	0.130	0.199	0.180
			(0.268)	(0.275)	(0.271)	(0.273)	(0.275)	(0.273)	(0.267)	(0.266)	(0.258)
Maternal support Network				0.137**	0.118**	0.119**	0.118**	0.126**	0.128**	0.127**	
				(0.0573)	(0.0564)	(0.0567)	(0.0571)	(0.0567)	(0.0556)	(0.0552)	
Married					1.029***	1.021***	1.011***	1.012***	0.876***	0.857***	0.851***
					(0.282)	(0.285)	(0.286)	(0.284)	(0.282)	(0.280)	(0.274)
Age						0.00532	0.00605	0.00764	0.00452	0.00324	0.00254
						(0.0226)	(0.0228)	(0.0226)	(0.0221)	(0.0220)	(0.0215)
college							0.661	0.711	0.787	0.751	0.788
							(1.102)	(1.092)	(1.070)	(1.056)	(1.044)
malaria								0.689**	0.615*	0.544*	0.552*
								(0.320)	(0.315)	(0.312)	(0.306)
foodincome									0.457***	0.384**	0.358**
									(0.154)	(0.159)	(0.155)
Index of Assets										0.996**	0.881**
										(0.433)	(0.412)
High Maternal support Network											0.687***
											(0.261)
Constant	5.744***	5.172***	4.945***	3.362***	3.063***	2.918***	2.941***	2.156*	0.398	0.900	2.106**
	(0.497)	(0.525)	(0.545)	(0.863)	(0.853)	(1.055)	(1.061)	(1.113)	(1.242)	(1.275)	(1.045)
Observations	247	214	210	206	201	201	200	200	200	197	201
R-squared	0.037	0.167	0.173	0.197	0.254	0.254	0.253	0.271	0.303	0.333	0.335

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table***3 Regression for Mothers Experience with Possibility of Postpartum After Quality Healthcare and Exposed to Maternal Support Scale

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
VARIABLES	Poss_PPD	Poss_PPD	Poss_PPD	Poss_PPD	Poss_PPD	Poss_PPD	Poss_PPD	Poss_PPD	Poss_PPD	Poss_PPD	Poss_PPD
Assist if any birth complication	0.155**	0.213***	0.222***	0.204***	0.252***	0.251***	0.259***	0.266***	0.268***	0.276***	0.290***
	(0.0642)	(0.0683)	(0.0700)	(0.0724)	(0.0697)	(0.0694)	(0.0696)	(0.0704)	(0.0702)	(0.0716)	(0.0704)
Delivery in SMGL Clinic		-0.305***	-0.307***	-0.293***	-0.224***	-0.230***	-0.229***	-0.236***	-0.251***	-0.263***	-0.279***
		(0.0619)	(0.0627)	(0.0643)	(0.0652)	(0.0650)	(0.0650)	(0.0658)	(0.0667)	(0.0675)	(0.0658)
Antenatal care (ANCPNC)			0.0565	0.0484	0.0432	0.0521	0.0532	0.0520	0.0478	0.0392	0.0463
			(0.0621)	(0.0639)	(0.0604)	(0.0604)	(0.0607)	(0.0608)	(0.0607)	(0.0613)	(0.0600)
Maternal support scale				0.00461	0.0158*	0.0151*	0.0149*	0.0145*	0.0109	0.0105	
				(0.00875)	(0.00848)	(0.00845)	(0.00846)	(0.00849)	(0.00891)	(0.00906)	
Married					-0.265***	-0.253***	-0.248***	-0.246***	-0.255***	-0.253***	-0.258***
					(0.0649)	(0.0651)	(0.0653)	(0.0654)	(0.0657)	(0.0662)	(0.0666)
Age						-0.00804	-0.00842*	-0.00844*	-0.00867*	-0.00858*	-0.00745
						(0.00501)	(0.00502)	(0.00503)	(0.00502)	(0.00506)	(0.00501)
college							-0.355	-0.351	-0.340	-0.341	-0.356
							(0.241)	(0.242)	(0.241)	(0.242)	(0.241)
malaria								0.0476	0.0424	0.0518	0.0541
								(0.0710)	(0.0709)	(0.0714)	(0.0706)
foodincome									0.0498	0.0503	0.0347
									(0.0378)	(0.0389)	(0.0389)
Index of Assets										-0.0419	-0.0387
										(0.0968)	(0.0959)
High Maternal support scale											0.109
											(0.0678)
Constant	0.0896	0.135	0.0911	0.0138	-0.237	-0.0168	-0.0132	-0.0490	-0.169	-0.172	0.0278
	(0.113)	(0.122)	(0.127)	(0.221)	(0.212)	(0.252)	(0.252)	(0.258)	(0.273)	(0.290)	(0.248)
Observations	243	209	205	201	196	196	195	195	195	193	196
R-squared	0.024	0.131	0.136	0.127	0.230	0.240	0.247	0.249	0.256	0.261	0.269

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table****4 Regression for Mother Experience with Possibility of Postpartum Depression After Quality HealthCare And Exposed to Maternal Support Network

VARIABLES	(1) Poss_PPD	(2) Poss_PPD	(3) Poss_PPD	(4) Poss_PPD	(5) Poss_PPD	(6) Poss_PPD	(7) Poss_PPD	(8) Poss_PPD	(9) Poss_PPD	(10) Poss_PPD	(11) Poss_PPD
Assist if any birth complication	0.155**	0.213***	0.222***	0.216***	0.283***	0.281***	0.289***	0.296***	0.291***	0.288***	0.298***
	(0.0642)	(0.0683)	(0.0700)	(0.0699)	(0.0682)	(0.0679)	(0.0681)	(0.0688)	(0.0684)	(0.0702)	(0.0699)
Delivery in SMGL Clinic		-0.305***	-0.307***	-0.294***	-0.251***	-0.255***	-0.254***	-0.260***	-0.274***	-0.287***	-0.306***
		(0.0619)	(0.0627)	(0.0632)	(0.0639)	(0.0636)	(0.0636)	(0.0643)	(0.0643)	(0.0652)	(0.0647)
Antenatal care (ANCPNC)			0.0565	0.0192	0.00510	0.0142	0.0157	0.0157	0.0153	0.000538	0.0159
			(0.0621)	(0.0638)	(0.0610)	(0.0609)	(0.0612)	(0.0613)	(0.0608)	(0.0614)	(0.0604)
Maternal support Network				-0.0257*	-0.0198	-0.0216*	-0.0206	-0.0199	-0.0195	-0.0210*	
				(0.0132)	(0.0126)	(0.0126)	(0.0126)	(0.0127)	(0.0126)	(0.0127)	
Married					-0.226***	-0.213***	-0.208***	-0.208***	-0.231***	-0.232***	-0.215***
					(0.0631)	(0.0632)	(0.0633)	(0.0634)	(0.0642)	(0.0647)	(0.0640)
Age						-0.00871*	-0.00904*	-0.00900*	-0.00912*	-0.00938*	-0.00899*
						(0.00501)	(0.00501)	(0.00502)	(0.00499)	(0.00502)	(0.00498)
college							-0.330	-0.327	-0.313	-0.314	-0.325
							(0.241)	(0.242)	(0.240)	(0.240)	(0.240)
malaria								0.0510	0.0419	0.0524	0.0382
								(0.0709)	(0.0706)	(0.0710)	(0.0707)
foodincome									0.0675*	0.0617	0.0588
									(0.0358)	(0.0374)	(0.0368)
Index of Assets										0.00286	-0.00284
										(0.0989)	(0.0951)
High Maternal support Network											-0.130**
											(0.0612)
Constant	0.0896	0.135	0.0911	0.394*	0.294	0.537**	0.523**	0.467*	0.198	0.267	0.0913
	(0.113)	(0.122)	(0.127)	(0.200)	(0.191)	(0.236)	(0.236)	(0.249)	(0.285)	(0.299)	(0.249)
Observations	243	209	205	201	196	196	195	195	195	192	196
R-squared	0.024	0.131	0.136	0.147	0.232	0.245	0.251	0.253	0.267	0.276	0.277

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table *****5 Regression for Child Health Outcome Considering Maternal Support Scale and Mothers Who Delivered in SMGL Facilities

VARIABLES	(1) ChildHealth	(2) ChildHealth	(3) ChildHealth	(4) ChildHealth	(5) ChildHealth	(6) ChildHealth	(7) ChildHealth	(8) ChildHealth	(9) ChildHealth	(10) ChildHealth
Delivery in SMGL Clinic	0.782***	0.780***	0.786***	0.800***	0.807***	0.812***	0.804***	0.787***	0.798***	0.786***
	(0.152)	(0.155)	(0.157)	(0.166)	(0.167)	(0.168)	(0.171)	(0.176)	(0.179)	(0.176)
Antenatal care (ANCPNC)		-0.0328	-0.000915	-0.00320	-0.0112	-0.0406	-0.0464	-0.0448	-0.0287	-0.0668
		(0.165)	(0.168)	(0.171)	(0.172)	(0.174)	(0.176)	(0.176)	(0.179)	(0.176)
Maternal support scale			0.0380*	0.0452**	0.0454**	0.0438*	0.0438*	0.0410*	0.0441*	
			(0.0216)	(0.0226)	(0.0227)	(0.0227)	(0.0228)	(0.0239)	(0.0245)	
Married				-0.121	-0.132	-0.120	-0.121	-0.128	-0.140	-0.127
				(0.167)	(0.169)	(0.170)	(0.171)	(0.172)	(0.174)	(0.175)
Age					0.00646	0.00630	0.00642	0.00615	0.00740	0.00827
					(0.0126)	(0.0127)	(0.0128)	(0.0128)	(0.0130)	(0.0130)
college						0.123	0.144	0.136	0.148	0.121
						(0.707)	(0.712)	(0.715)	(0.719)	(0.719)
malaria							0.0557	0.0530	0.0450	0.0602
							(0.186)	(0.187)	(0.189)	(0.186)
foodincome								0.0415	0.0515	0.0376
								(0.102)	(0.105)	(0.107)
Index of Assets									-0.171	-0.108
									(0.272)	(0.267)
High Maternal support scale										0.276
										(0.179)
Constant	3.603***	3.621***	2.765***	2.648***	2.482***	2.539***	2.503***	2.399***	2.242***	3.126***
	(0.116)	(0.169)	(0.525)	(0.535)	(0.626)	(0.628)	(0.642)	(0.692)	(0.733)	(0.576)
Observations	164	162	159	156	156	155	155	155	154	156
R-squared	0.141	0.139	0.147	0.146	0.148	0.152	0.153	0.154	0.157	0.158

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table******6 Regression for Mother's Experience with Life Satisfaction if she received assistance from Any SMGL clinic After Complications and Exposed to Maternal Support Scale									
VARIABLES	(1) Satisfaction	(2) Satisfaction	(3) Satisfaction	(4) Satisfaction	(5) Satisfaction	(6) Satisfaction	(7) Satisfaction	(8) Satisfaction	(9) Satisfaction
SMGL Assist If complication	1.304***	1.148**	1.347***	0.967*	0.972*	0.853	0.839	0.908	1.047*
	(0.461)	(0.481)	(0.510)	(0.574)	(0.580)	(0.583)	(0.578)	(0.564)	(0.544)
Antenatal care (ANCPNC)		0.161	0.182	0.265	0.257	0.254	0.252	0.295	0.394
		(0.404)	(0.419)	(0.435)	(0.448)	(0.446)	(0.443)	(0.434)	(0.422)
Maternal support scale			0.0608	0.0534	0.0541	0.0533	0.0169	-0.00268	
			(0.0546)	(0.0572)	(0.0581)	(0.0578)	(0.0618)	(0.0609)	
Married				0.527	0.515	0.476	0.408	0.497	0.305
				(0.478)	(0.506)	(0.504)	(0.502)	(0.493)	(0.503)
Age					0.00293	0.00119	-0.000691	-0.0217	-0.0138
					(0.0374)	(0.0372)	(0.0370)	(0.0368)	(0.0362)
malaria						0.724	0.519	0.494	0.454
						(0.511)	(0.523)	(0.508)	(0.491)
foodincome							0.398	0.234	0.139
							(0.252)	(0.256)	(0.252)
Index of Assets								1.849***	1.638**
								(0.697)	(0.687)
High Maternal support scale									0.585
									(0.505)
Constant	6.437***	6.335***	4.902***	4.852***	4.768***	4.317**	3.679**	5.311***	5.169***
	(0.224)	(0.320)	(1.326)	(1.365)	(1.744)	(1.764)	(1.796)	(1.913)	(1.401)
Observations	114	110	107	102	102	102	102	100	102
R-squared	0.067	0.051	0.064	0.061	0.061	0.080	0.104	0.180	0.186
Standard errors in parentheses									
*** p<0.01, ** p<0.05, * p<0.1									

Table*******7 Regression for Mother's Experience with Life Satisfaction if she received assistance from Any SMGL clinic After Complications and Exposed to Maternal Support Network									
VARIABLES	(1) Satisfaction	(2) Satisfaction	(3) Satisfaction	(4) Satisfaction	(5) Satisfaction	(6) Satisfaction	(7) Satisfaction	(8) Satisfaction	(9) Satisfaction
SMGL Assist If complication	1.304***	1.148**	1.092**	0.689	0.691	0.588	0.698	0.813	0.886*
	(0.461)	(0.481)	(0.493)	(0.548)	(0.551)	(0.554)	(0.550)	(0.536)	(0.526)
Antenatal care (ANCPNC)		0.161	0.221	0.337	0.323	0.316	0.355	0.440	0.472
		(0.404)	(0.425)	(0.441)	(0.452)	(0.450)	(0.445)	(0.440)	(0.431)
Maternal support Network			0.0968	0.112	0.115	0.107	0.111	0.128	
			(0.0994)	(0.101)	(0.104)	(0.103)	(0.102)	(0.0997)	
Married				0.625	0.601	0.568	0.396	0.442	0.458
				(0.459)	(0.483)	(0.482)	(0.485)	(0.477)	(0.472)
Age					0.00611	0.00410	0.00597	-0.0123	-0.0156
					(0.0375)	(0.0373)	(0.0369)	(0.0366)	(0.0359)
malaria						0.694	0.471	0.448	0.405
						(0.507)	(0.515)	(0.504)	(0.490)
foodincome							0.429*	0.247	0.226
							(0.231)	(0.243)	(0.236)
Index of Assets								1.807***	1.739**
								(0.680)	(0.674)
High Maternal support NetworK									0.514
									(0.425)
Constant	6.437***	6.335***	5.250***	4.832***	4.652***	4.291**	2.570	3.570*	4.894***
	(0.224)	(0.320)	(1.151)	(1.182)	(1.624)	(1.638)	(1.864)	(1.923)	(1.429)
Observations	114	110	108	103	103	103	103	100	102
R-squared	0.067	0.051	0.062	0.064	0.065	0.083	0.115	0.194	0.187
Standard errors in parentheses									
*** p<0.01, ** p<0.05, * p<0.1									

Table****8 Regression for Mother's Experience with Possibility of PPD if She Received Assistance from Any SMGL Clinic After Complications and Exposed to Maternal Support Scale									
VARIABLES	(1) poss_PPD	(2) poss_PPD	(3) poss_PPD	(4) poss_PPD	(5) poss_PPD	(6) poss_PPD	(7) poss_PPD	(8) poss_PPD	(9) poss_PPD
SMGL Assist If complication	-0.419***	-0.410***	-0.356***	-0.399***	-0.411***	-0.425***	-0.425***	-0.462***	-0.478***
	(0.103)	(0.108)	(0.112)	(0.116)	(0.117)	(0.119)	(0.120)	(0.120)	(0.117)
Antenatal care (ANCPNC)		0.00767	0.00324	-0.0152	0.00598	0.00534	0.00609	-0.0289	-0.0199
		(0.0917)	(0.0934)	(0.0900)	(0.0928)	(0.0930)	(0.0934)	(0.0941)	(0.0927)
Maternal support scale			0.0190	0.0277**	0.0261**	0.0260**	0.0230*	0.0181	
			(0.0122)	(0.0119)	(0.0120)	(0.0120)	(0.0134)	(0.0135)	
Married				-0.200**	-0.171	-0.172*	-0.179*	-0.147	-0.169
				(0.0981)	(0.103)	(0.103)	(0.105)	(0.106)	(0.109)
Age					-0.00722	-0.00761	-0.00754	-0.0113	-0.01000
					(0.00760)	(0.00765)	(0.00768)	(0.00790)	(0.00789)
malaria						0.0687	0.0561	0.0832	0.0829
						(0.104)	(0.107)	(0.107)	(0.105)
foodincome							0.0290	-0.00226	-0.0247
							(0.0558)	(0.0582)	(0.0584)
Index of Assets								0.231	0.223
								(0.149)	(0.148)
High Maternal support scale									0.199*
									(0.114)
Constant	0.530***	0.527***	0.0924	-0.0432	0.164	0.131	0.0829	0.435	0.812**
	(0.0510)	(0.0722)	(0.295)	(0.281)	(0.356)	(0.361)	(0.374)	(0.411)	(0.321)
Observations	110	106	103	98	98	98	98	96	98
R-squared	0.133	0.124	0.145	0.251	0.259	0.262	0.264	0.294	0.297
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1									

Table****9 Regression for Mother's Experience with Possibility of PPD if She Received Assistance from Any SMGL Clinic After Complications and Exposed to Maternal Support Network

VARIABLES	(1) poss_PPD	(2) poss_PPD	(3) poss_PPD	(4) poss_PPD	(5) poss_PPD	(6) poss_PPD	(7) poss_PPD	(8) poss_PPD	(9) poss_PPD
SMGL Assist If complication	-0.419***	-0.410***	-0.408***	-0.492***	-0.495***	-0.506***	-0.482***	-0.514***	-0.526***
	(0.103)	(0.108)	(0.111)	(0.116)	(0.116)	(0.118)	(0.118)	(0.117)	(0.116)
Antenatal care (ANCPNC)		0.00767	0.00239	-0.0142	0.00694	0.00629	0.0151	-0.0373	-0.0271
		(0.0917)	(0.0972)	(0.0958)	(0.0977)	(0.0981)	(0.0977)	(0.0983)	(0.0975)
Maternal support Network			0.00905	0.0139	0.00915	0.00859	0.00949	0.00505	
			(0.0227)	(0.0218)	(0.0222)	(0.0223)	(0.0222)	(0.0220)	
Married				-0.134	-0.103	-0.104	-0.139	-0.119	-0.0995
				(0.0977)	(0.102)	(0.102)	(0.105)	(0.104)	(0.104)
Age					-0.00848	-0.00884	-0.00791	-0.0125	-0.0125
					(0.00789)	(0.00795)	(0.00793)	(0.00804)	(0.00801)
malaria						0.0593	0.0261	0.0724	0.0672
						(0.107)	(0.109)	(0.108)	(0.106)
foodincome							0.0741	0.0261	0.0191
							(0.0513)	(0.0551)	(0.0538)
Index of Assets								0.260*	0.266*
								(0.149)	(0.149)
High Maternal support Network									-0.00893
									(0.0959)
Constant	0.530***	0.527***	0.423	0.414	0.667*	0.641*	0.318	0.710	0.803**
	(0.0510)	(0.0722)	(0.264)	(0.257)	(0.349)	(0.353)	(0.416)	(0.440)	(0.337)
Observations	110	106	104	99	99	99	99	96	98
R-squared	0.133	0.124	0.121	0.202	0.212	0.215	0.232	0.280	0.273

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table****10 Regression for Mother's Experience with Life Satisfaction Based on the Interaction of Birth Complications and Maternal Support Scale								
VARIABLES	(1) Satisfaction	(2) Satisfaction	(3) Satisfaction	(4) Satisfaction	(5) Satisfaction	(6) Satisfaction	(7) Satisfaction	(8) Satisfaction
Support&SMGLHealthcare	2.244***	2.497***	2.419**	2.420**	2.412**	2.560**	2.421**	2.438**
	(0.814)	(0.893)	(0.987)	(0.992)	(0.987)	(0.978)	(0.954)	(0.941)
SMGLHealthcare	0.0767	-0.104	-0.233	-0.228	-0.341	-0.430	-0.272	-0.172
	(0.698)	(0.716)	(0.744)	(0.749)	(0.749)	(0.742)	(0.718)	(0.708)
Antenatal care (ANCPNC)		0.586	0.676	0.667	0.661	0.685	0.727	0.812*
		(0.431)	(0.456)	(0.468)	(0.466)	(0.460)	(0.454)	(0.441)
Maternal support Network	0.0632	0.0679	0.0596	0.0605	0.0597	0.0189	0.00359	
	(0.0510)	(0.0529)	(0.0558)	(0.0567)	(0.0564)	(0.0600)	(0.0592)	
Married			0.463	0.447	0.408	0.327	0.401	0.238
			(0.467)	(0.494)	(0.492)	(0.488)	(0.481)	(0.488)
Age				0.00375	0.00203	-4.71e-05	-0.0185	-0.0116
				(0.0365)	(0.0363)	(0.0359)	(0.0358)	(0.0351)
malaria					0.717	0.484	0.443	0.413
					(0.498)	(0.508)	(0.494)	(0.477)
foodincome						0.451*	0.309	0.224
						(0.245)	(0.250)	(0.247)
Index of Assets							1.642**	1.466**
							(0.682)	(0.670)
High Maternal support scale								0.542
								(0.491)
Constant	4.958***	4.519***	4.501***	4.393**	3.948**	3.201*	4.579**	4.579***
	(1.187)	(1.291)	(1.338)	(1.708)	(1.726)	(1.752)	(1.881)	(1.379)
Observations	111	107	102	102	102	102	100	102
R-squared	0.145	0.131	0.116	0.116	0.135	0.165	0.234	0.241
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1								

Table****11 Regression for Mother's Experience with Life Satisfaction Based on the Interaction of Birth Complications and Maternal Support Network

VARIABLES	(1) Satisfaction	(2) Satisfaction	(3) Satisfaction	(4) Satisfaction	(5) Satisfaction	(6) Satisfaction	(7) Satisfaction	(8) Satisfaction
Support&SMGLHealthcare	2.385**	2.560**	2.431**	2.442**	2.494**	2.723**	2.424**	2.397**
	(0.958)	(1.000)	(1.144)	(1.158)	(1.152)	(1.136)	(1.114)	(1.038)
SMGLHealthcare	-0.135	-0.304	-0.420	-0.426	-0.557	-0.539	-0.283	-0.300
	(0.708)	(0.727)	(0.750)	(0.757)	(0.758)	(0.745)	(0.728)	(0.727)
Antenatal care (ANCPNC)		0.477	0.583	0.591	0.590	0.659	0.722	0.792*
		(0.426)	(0.449)	(0.462)	(0.459)	(0.452)	(0.450)	(0.443)
Maternal support Network	-0.0201	-0.0279	-0.0123	-0.0145	-0.0255	-0.0333	-0.000963	
	(0.104)	(0.108)	(0.115)	(0.119)	(0.118)	(0.116)	(0.114)	
Married			0.585	0.596	0.561	0.368	0.408	0.422
			(0.452)	(0.475)	(0.473)	(0.473)	(0.468)	(0.461)
Age				-0.00309	-0.00539	-0.00418	-0.0190	-0.0177
				(0.0371)	(0.0369)	(0.0362)	(0.0360)	(0.0351)
malaria					0.727	0.480	0.442	0.380
					(0.498)	(0.502)	(0.494)	(0.479)
foodincome						0.481**	0.313	0.317
						(0.226)	(0.240)	(0.234)
Index of Assets							1.649**	1.611**
							(0.670)	(0.661)
High Maternal support Network								0.0821
								(0.456)
Constant	6.611***	6.420***	6.011***	6.108***	5.761***	3.968**	4.667**	4.605***
	(1.117)	(1.211)	(1.287)	(1.739)	(1.745)	(1.910)	(1.951)	(1.402)
Observations	112	108	103	103	103	103	100	102
R-squared	0.134	0.118	0.106	0.106	0.126	0.166	0.234	0.232

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table****12 Regression for Mother's Experience with Possibility of PPD Based on the Interaction of Birth Complications and Maternal Support Scale								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	poss_PPD	poss_PPD	poss_PPD	poss_PPD	poss_PPD	poss_PPD	poss_PPD	poss_PPD
Support&SMGLHealthcare	0.164	0.225	-0.00315	-0.00283	-0.00466	0.00675	-0.0639	-0.0767
	(0.184)	(0.202)	(0.207)	(0.207)	(0.208)	(0.210)	(0.210)	(0.210)
SMGLHealthcare	-0.477***	-0.487***	-0.398**	-0.410**	-0.423***	-0.428***	-0.430***	-0.440***
	(0.158)	(0.163)	(0.156)	(0.157)	(0.159)	(0.160)	(0.159)	(0.158)
Antenatal care (ANCPNC)		0.0408	-0.0158	0.00548	0.00452	0.00728	-0.0409	-0.0338
		(0.0993)	(0.0975)	(0.100)	(0.100)	(0.101)	(0.102)	(0.101)
Maternal support Scale	0.0176	0.0196	0.0277**	0.0261**	0.0259**	0.0229*	0.0180	
	(0.0118)	(0.0122)	(0.0120)	(0.0121)	(0.0121)	(0.0135)	(0.0135)	
Married			-0.200**	-0.171	-0.172	-0.179*	-0.145	-0.168
			(0.0988)	(0.104)	(0.104)	(0.105)	(0.106)	(0.110)
Age				-0.00722	-0.00761	-0.00754	-0.0113	-0.0101
				(0.00765)	(0.00769)	(0.00773)	(0.00795)	(0.00793)
malaria					0.0687	0.0559	0.0849	0.0848
					(0.105)	(0.108)	(0.108)	(0.106)
foodincome						0.0292	-0.00487	-0.0283
						(0.0564)	(0.0592)	(0.0595)
Index of Assets							0.237	0.229
							(0.151)	(0.149)
High Maternal support Scale								0.202*
								(0.114)
Constant	0.125	0.0582	-0.0428	0.164	0.131	0.0817	0.455	0.835**
	(0.274)	(0.297)	(0.284)	(0.359)	(0.364)	(0.378)	(0.418)	(0.329)
Observations	107	103	98	98	98	98	96	98
R-squared	0.158	0.155	0.251	0.259	0.262	0.265	0.295	0.298
Standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table****13 Regression for Mother's Experience with Possibility of PPD Based on the Interaction of Birth Complications and Maternal Support Network								
VARIABLES	(1) poss_PPD	(2) poss_PPD	(3) poss_PPD	(4) poss_PPD	(5) poss_PPD	(6) poss_PPD	(7) poss_PPD	(8) poss_PPD
Support&SMGLHealthcare	0.210	0.228	-0.107	-0.0734	-0.0711	-0.0319	-0.129	-0.0540
	(0.220)	(0.230)	(0.247)	(0.249)	(0.250)	(0.251)	(0.249)	(0.234)
SMGLHealthcare	-0.531***	-0.532***	-0.443***	-0.462***	-0.473***	-0.468***	-0.456***	-0.500***
	(0.162)	(0.167)	(0.162)	(0.163)	(0.165)	(0.164)	(0.162)	(0.164)
Antenatal care (ANCPNC)		0.0248	-0.0247	-0.00106	-0.00146	0.0116	-0.0525	-0.0344
		(0.0998)	(0.0993)	(0.102)	(0.102)	(0.102)	(0.103)	(0.103)
Maternal support Network	-0.00702	-0.00231	0.0195	0.0132	0.0125	0.0112	0.0121	
	(0.0242)	(0.0254)	(0.0254)	(0.0262)	(0.0263)	(0.0262)	(0.0260)	
Married			-0.132	-0.103	-0.104	-0.139	-0.117	-0.0988
			(0.0982)	(0.102)	(0.103)	(0.105)	(0.105)	(0.105)
Age				-0.00818	-0.00854	-0.00778	-0.0122	-0.0124
				(0.00800)	(0.00806)	(0.00803)	(0.00810)	(0.00806)
malaria					0.0588	0.0262	0.0737	0.0685
					(0.107)	(0.109)	(0.108)	(0.107)
foodincome						0.0733	0.0217	0.0167
						(0.0519)	(0.0560)	(0.0551)
Index of Assets							0.271*	0.269*
							(0.151)	(0.150)
High Maternal support Network								0.00102
								(0.106)
Constant	0.592**	0.530*	0.360	0.621	0.596	0.301	0.653	0.810**
	(0.260)	(0.285)	(0.287)	(0.384)	(0.388)	(0.439)	(0.456)	(0.340)
Observations	108	104	99	99	99	99	96	98
R-squared	0.136	0.129	0.204	0.213	0.216	0.233	0.282	0.273
Standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

PART D: Maternal Support Network

52.

For each of the following statements, please tick one box which shows how you feel about the support you have right now.

	Always	Most of the time	Some of the time	Rarely	Never
A. I have good friends who support me	☐5	☐4	☐3	☐2	☐1
B. My family is always there for me	☐5	☐4	☐3	☐2	☐1
C. My husband/partner helps me a lot	☐5	☐4	☐3	☐2	☐1
D. There is conflict with my husband/partner	☐5	☐4	☐3	☐2	☐1
E. I feel controlled by my husband/partner	☐5	☐4	☐3	☐2	☐1
F. I feel loved by my husband/partner	☐5	☐4	☐3	☐2	☐1

Fig1* This is an instrument that measured smaller support network. This we copied from the maternal support scale in (Webster 2000) to determine the measure of smaller support network. The average score for our sample is 22.23762 and any score above is high maternal support network.

53.

For each of the following statements, please select one box which shows how you feel about the support you have right now: 5=Always 4=Most of the time 3=Some of the time 2=Rarely 1=Never

	How often do you talk to NAME?	Does NAME watch children for you?	Would NAME help to take care of you or baby if you were sick for days?	Would NAME give you guidance about taking care of your baby?	Would NAME give you money for you or the children in case of need?
A. Husband/Partner					
B. Own Mother					
C. Own Father					
D. Mother in Law					
E. Father in Law					
F. Own sisters/brothers					
G. Sisters/brothers in Law					
H. Cousins					
I. Neighbors					
J. Friends					

Figure2** Is an instrument that measured bigger support network. This we developed as a modification of the maternal scale in (Webster 2000) to determine the measure of bigger support network. The average score is 10.71 and any score above is huge maternal support network.

26. Does anyone in your household own

a) Radio	☐YES	☐NO	☐I Don't Know
b) Television	☐YES	☐NO	☐I Don't Know
c) Cell phone	☐YES	☐NO	☐I Don't Know
d) Landline telephone	☐YES	☐NO	☐I Don't Know
e) Refrigerator	☐YES	☐NO	☐I Don't Know
f) Water Pump	☐YES	☐NO	☐I Don't Know
g) Electric generator	☐YES	☐NO	☐I Don't Know
h) Bed	☐YES	☐NO	☐I Don't Know
i) Sofa	☐YES	☐NO	☐I Don't Know
j) Sewing machine	☐YES	☐NO	☐I Don't Know
k) PC/tablet(e.g. IPad) or internet	☐YES	☐NO	☐I Don't Know
l) Bicycle/Motor bike	☐YES	☐NO	☐I Don't Know
m) Animal-drawn cart	☐YES	☐NO	☐I Don't Know
n) Car or truck	☐YES	☐NO	☐I Don't Know
o) Tractor	☐YES	☐NO	☐I Don't Know
p) Cattle	☐YES	☐NO	☐I Don't Know
q) Donkey	☐YES	☐NO	☐I Don't Know
r) Sheep	☐YES	☐NO	☐I Don't Know
Chickens	☐YES	☐NO	☐I Don't Know

Fig3*** **This is the part of survey instrument that estimates the different household possessions that can influence maternal decisions**

Chart1* This Chart Depicts the Contributions of The People in the Mother's Circle of Influence to Form a Smaller Support Network

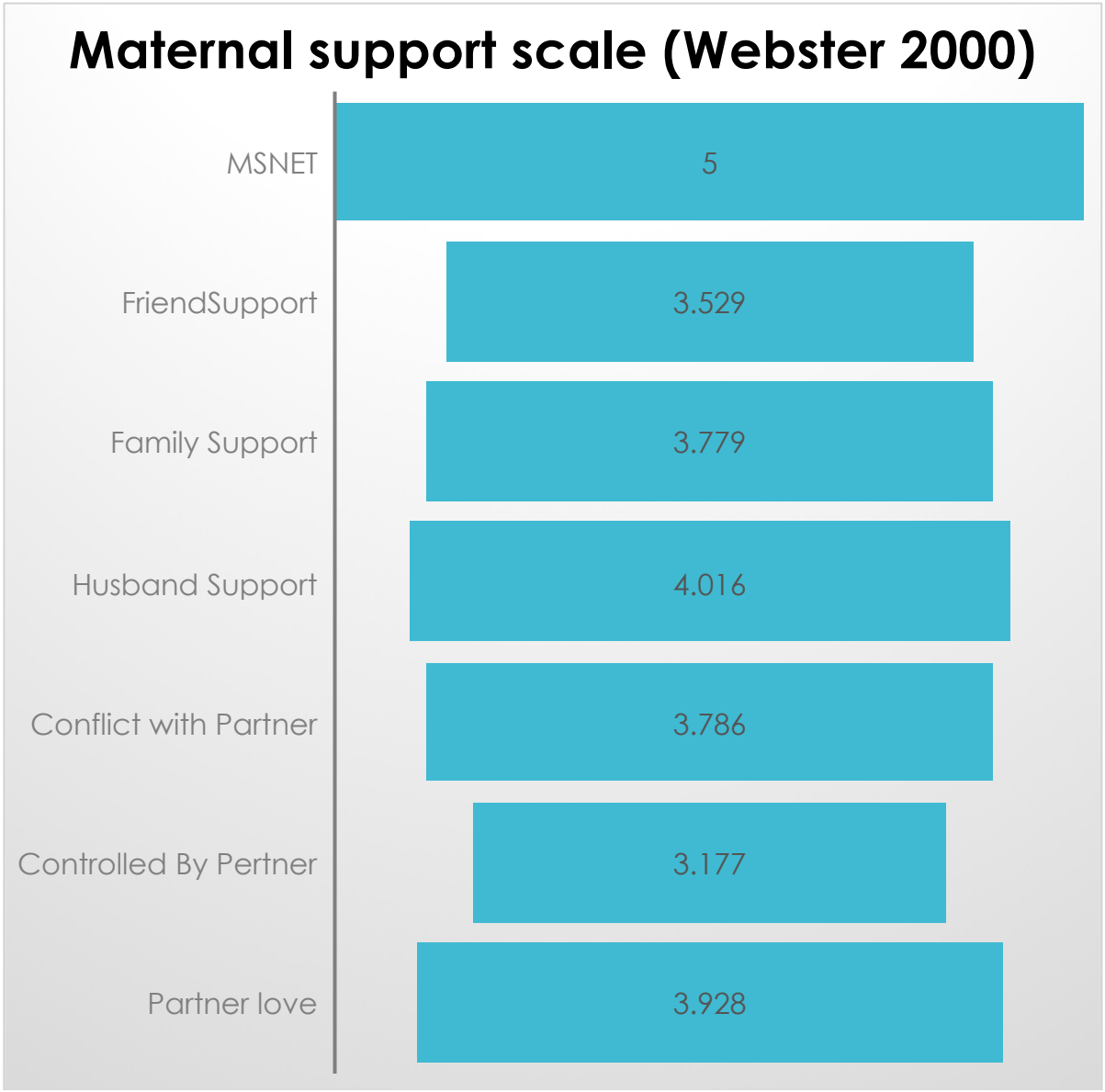


Chart2** This Chart Depicts the Contributions of The People in the Mother's Circle of Influence to Form a Bigger Support Network