AFYA JAMII: EVALUATION OF A GROUP ANTENATAL AND WELL-CHILD CARE PROGRAM IN KENYA

By

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A paper presented to the faculty of The University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Master of Public Health in the Department of Maternal and Child Health.
Chapel Hill, N.C.

April 8, 2016

Approved by:

Abstract

Objectives: Facility-based group antenatal care has been implemented with success in high-income countries (HICs), but there is no literature describing implementation in Sub-Saharan Africa. We assessed the feasibility of implementing antenatal and well-child group care in public health facilities in western Kenya.

Methods: We conducted a retrospective analysis of uptake of health services from 5 group care and 9 comparison health facilities. We aimed to determine whether an antenatal and well-child group care model is feasible to implement within the public health system in Kenya.

Results: Comparing group care and standard care health facilities, we found a statistically significant difference between the average monthly number of new Family Planning (FP) visits (41.5, 95% CI 36.1-46.9 and 32.3, 95% CI 29.2-35.5, p=0.004), the median monthly number of long-term FP visits (18, Interquartile Range (IQR) 11-29 and 11.5 IQR 4.5-26, p=0.001), and the median monthly number of newborns with low birth weight (0, IQR 0-1 and 1, IQR 0-3, p<0.001) at group and standard care health facilities, respectively. We found no difference in the primary outcome, the mean monthly number of the uptake of 4 or more ANC visits (28.7, 95% CI 25.8 to 31.6 and 25.9, 95% CI 24.0-27.8, p=0.104) or in the mean monthly number of facility deliveries (38.7, 95% CI 26.0-43.7 and 34.9, 95% CI 33.4-44.1, p=0.460) and OPV0 doses (35.1, 95% CI 29.7-40.6 and 36.8, 95% CI 32.7-41.0, p=0.616).

Conclusion: Group antenatal care is a feasible health service delivery model in public health facilities in SSA. More research is needed to understand how facility-based group care can improve health outcomes for women and children in SSA.

Introduction

Preventing maternal, newborn and under-5 child mortality is high on the agenda of the Sustainable Development Goals with commitments to reduce global neonatal, under-5 and maternal mortality (Assembly & Concern, 2013). To meet the new 2030 targets, resources need to be focused on cost-effective evidence-based interventions that achieve desired health outcomes and are scalable as integrated packages of care within health systems.

In 2001, the World Health Organization (WHO) demonstrated that focused antenatal care (ANC), a four-visit package of evidence-based interventions, is an effective entry point for women into health care (Lincetto, Mothebesoane-anoh, Gomez, & Munjanja, 2013; Villar et al., 2001). Focused ANC saves neonatal lives and can also save maternal lives by increasing uptake of safer deliveries with skilled birth attendants (Campbell, Graham, Ronsmans, Borghi, & et al., 2006; Lincetto, Mothebesoane-anoh, Gomez, & Munjanja, 2013). Ensuring evidence-based preventive services are provided in ANC and well-child care (WCC) clinics can prevent 50% of under-5 deaths (Jones, Steketee, Black, Bhutta, & Morris, 2003, (Bhutta et al., 2014).

Implementing comprehensive packages of ANC and WCC is challenging in low and middle-income countries (LMICs) (Bhutta et al., 2010). Facility-based interventions rely on functioning health systems, which in Sub-Saharan Africa (SSA) are often inadequate with poor quality, frequent stock outs, and too few health providers (Bucher et al., 2015; Van Den Broek & Graham, 2009). Women experience significant variation of ANC services between health facilities despite guidelines for standardized care (Lee, Madhavan, & Bauhoff, 2016). As a result, new service delivery mechanisms are needed to help shift responsibilities within health facilities and ensure improved quality of care.

Group antenatal care is one possible shift to improve services. Group ANC was first described in the literature in 1998 and trademarked as Centering Pregnancy (CP) (Rising, 1998). Since then, more than 400 sites across the U.S. offer CP and many programs offer other group care

models ("About Centering Healthcare Institute | Centering Healthcare Institute," n.d.; Lathrop, 2013). Randomized controlled studies on group ANC have shown improvements in preterm birth, low birth weight, breastfeeding initiation in the first 6 months, adequacy of care, health knowledge, and satisfaction with care (Ickovics et al., 2007; Kennedy et al., 2011).

Despite the popularity of group ANC in high-income countries (HIC), there have been few attempts at adapting facility-based group care to an African setting. After performing a two-session pilot of CP to 24 women in Malawi 2013, Patil et al. showed that fidelity of the CP model was maintained and that women and providers had positive experiences (Patil et al., 2013). We found no other published reports of group ANC in SSA and found only one other on-going pilot of group ANC at 10 clinics in Kenya by Rand (Luoto, n.d.). Though little evidence exists for facility-based groups, community-based women's groups are an effective intervention to improve maternal and neonatal survival in LMIC (Prost et al., 2013). In addition, combining women's groups with facility-based quality improvement initiatives has been a cost-effective strategy to decrease neonatal and maternal mortality (Colbourn et al., 2013, 2015; Lewycka et al., 2013).

In Kenya, pregnant women face many of the obstacles in accessing and receiving quality ANC that women throughout SSA face. According to the 2009 Kenya Demographic Health Survey (KDHS), the MMR and NMR were 448 per 100,000 live births and 54 per 1000 live births. Approximately 73.3% of recently pregnant women living in Western Province delivered in their homes without a skilled attendant, 47% attended 4 or more ANC visits, as recommended by the WHO. Infants of these women were exclusively breastfed for a median of only 1.1 months (Kenya National Bureau of Statistics (KNBS), 2010).

Since 2008, the Academic Model Providing Access to Healthcare (AMPATH) has partnered with the Kenya Ministry of Health (MOH) to focus on improving Maternal and Child Health (MCH) services throughout western Kenya. Much of AMPATH's work has been focused on improving quality of care in health facilities and developing community health volunteer (CHV) programs to

find pregnant women and link them to health facilities. In addition to low uptake of maternal health services and poor quality of care, AMPATH encountered health provider shortages, staff burnout and poor linkage of CHVs to health facilities. Maternal and child health in western Kenya suffers from problems similar to those improved by group care in the literature including low birth weight, prematurity, low rates of breastfeeding, poor quality of services, and poor satisfaction with care. Group ANC has the potential to greatly improve maternal and newborn outcomes by focusing on improved provider satisfaction and increased peer support in pregnancy as a strategy to improve health care decision-making and quality of care. As a result, we developed and implemented a group ANC and WCC program in order to strengthen the health system and improve the health of women and children.

Our primary aim was to determine whether maternal and child group care is feasible to implement in public health centers in Kenya. We hypothesized that the number of women adhering to 4 or more ANC visits in the group care facilities would be higher than comparison facilities with standard ANC. Our secondary aim was to perform a program evaluation to understand if our model could have the potential to improve health uptake and health behaviors. This pilot was implemented to prepare for a clinical trial that will evaluate the effectiveness of group care as an intervention to improve maternal and infant health outcomes.

Methods

Study Design

We performed a retrospective evaluation of Afya Jamii, a group antenatal/well-child care program, in 5 facilities and 10 comparison health facilities with the usual standard of care in Busia County. We compared maternal and child facility-level health uptake data in intervention and comparison facilities during the first 1.5 years of implementation of Afya Jamii services, from April 2013 through October 2014. In addition, we performed a descriptive analysis of attendance records

from the first this period and exit surveys from women who participated in the first six months of the program.

Program Description & Implementation. To provide women peer support and standardized education and care throughout pregnancy and early motherhood, AMPATH and the MOH implemented facility-based mother-baby group care in 5 of the 8 health facilities in Teso North District. In January of 2013, we partnered with the South Community Birthing Program, a collaborative maternity care program that has been providing group ANC to women in Vancouver, Canada since 2004 (Harris et al., 2012). We worked with local stakeholders to design a group care model for antenatal, postnatal and well-child care called Afya Jamii, translated as Health of the Community/Family. Local MOH officials chose the 5 facilities where the program would be piloted. We designed a package of care including clinical management tools (Appendix A) and trained 2 health providers and 2-3 CHVs from each of the 5 health facilities. After the training, we provided monthly mentorship during group care visits and quarterly refresher trainings through the first year to address problems and to continually improve the program.

Afya Jamii provides an antenatal and postnatal visit structure that keeps providers accountable to a standard of care in pregnancy and infancy and assists in the management of workflows within highly under-resourced and understaffed health centers. Each woman attending her first ANC appointment at these facilities is registered into a group based on her expected date of delivery (EDD) and provided monthly appointment dates for follow-up until her infant's fourth month of life. Since a majority of women present for their first ANC visit in second trimester, group visits start at the end of the second trimester. To provide care jointly to groups of 15-20 women, health providers partner with local CHVs to ensure that women and infants receive comprehensive care per MOH guidelines during their 2-hour appointments. By task-shifting measurement of vitals and health and social education to CHVs and grouping women based on their EDD, over-extended providers in high volume and understaffed clinics are able to ensure that all women receive

enhanced care while capitalizing on the collective energy gained through the group meeting.

Program Setting

In partnership with the MOH, AMPATH implemented this pilot project in 5 health facilities (Moding Health Centre, Malaba Dispensary, Akichelsit Dispensary, Angurai Health Centre and Kocholya District Hospital). All of these facilities provide antenatal and well child services (level 2), but only the Health Centres (level 3) and the Hospital (level 4) manage labor and delivery. This district, now transitioned to a sub-county in Busia County, has a population of 117,942 people (Kenya National Bureau of Statistics, 2010). The County Ministry of Health (CMOH) chose two comparison facilities within Busia County for each group care facility, 10 comparison facilities total, by matching them based on level of service provided and volume of patients.

Data Collection & Measurement

Health facility data were collected from MOH facility records and, if necessary, from the District Health Information System (DHIS), the MOH electronic reporting tool. The MOH facility records served as the main data source for this analysis. We trained research assistants to compile individual encounters to determine the monthly uptake and enter this into a database. We used data from DHIS when we encountered missing facility registers from sites. Prior to doing this, we cross-referenced data available from existing registers for that site with the DHIS to ensure the data agreed.

To better understand the program, we extracted data from attendance records kept at each of the 5 sites implementing group care (Appendix B). These records had been maintained at each group care meeting by the CHVs overseeing the group. In addition in the first six months of the program, we performed exit surveys of women attending their last meeting (Table 1). These surveys help us to understand the health uptake, breastfeeding practices, and care preferences of women who completed the entire program. Program staff not involved with implementation administered these surveys by interviewing women in attendance on the last day of group care.

Women were told their answers were anonymous, and responses were collected using an administered structured questionnaire.

Our primary outcome was the number of women who had ≥4 ANC visits at group and standard care health facilities each month. Secondary outcomes included the monthly number of oral polio vaccine (OPV0) doses given in the first two weeks of life, antenatal appointments occurring before 16 weeks of pregnancy, health facility deliveries, new family planning visits, long-term family planning (LTFP) visits, and low birth weight. We calculated the total number of visits per month for each variable using the same method health facility staff perform.

We were able to obtain individual participant characteristics (age, gravidity, and parity) and attendance at the 7 clinic visits from Afya Jamii program records. Since we did not collect individual health outcomes throughout implementation, exit interviews helped us to understand health behaviors and uptake including the number of ANC visits (1, 2-3, 4 or more), place of delivery (home, facility, in transit/other), family planning uptake (condoms, oral contraceptive pills (OCPs), depot medroxyprogesterone acetate (DMPA), LTFP including implants and intrauterine devices (IUD) or none), and exclusive breastfeeding on program completion when the child is 4-5 months of age.

Statistical Analysis

We used the Stata 13 (StataCorp, Inc., College Station, Tx) software package. We first analyzed the facility-level data of the 5 intervention and 10 comparison sites. We removed one of the level 2 comparison sites providing antenatal and well child services due to very poor data quality. First, we performed univariate analysis of the individual facility-level variables to assess distributions and variance. To evaluate the differences between the 5 group care sites and the 9 standard care sites, we used a 2-sample T-test to compare means for the monthly total of women with 4 or more ANC visits and number of OPV0 administered, a T-test with unequal variances to

compare means for the monthly total of new FP visits and facility deliveries, and a Wilcoxon Rank-Sum Test to compare medians of monthly LTFP visits and babies born with low birth weight.

For the individual participant level data derived from the program records and exit surveys, we performed descriptive analysis. Using attendance records, we used Excel to calculate the total percentage of women attending each visit. The number of women attending each specific visit acted as the numerator and the number of women who attended at least one group care visit as the denominator. Since there was a significant amount of missing data in the attendance records, we coded each missing value as a 0 meaning the woman did not attend the session and included it in our analysis. Finally, we stratified the data by the facility, level of service and month of the EDD to better evaluate the relationship with attendance rates. To evaluate the exit surveys, a descriptive analysis was performed on each of the variables.

Results

In our analysis of the facility-level uptake data (Table 2), we showed no significant difference between group care and standard care sites in the primary outcome, the mean monthly number of women with 4 or more ANC visits (28.7, 95% CI 25.8 to 31.6 and 25.9, 95% CI 24.0-27.8, p=0.104) and in secondary outcomes, the mean monthly number of facility deliveries (38.7, 95% CI 26.0-43.7 and 34.9, 95% CI 33.4-44.1, p=0.460) and of OPV0 doses (35.1, 95% CI 29.7-40.6 and 36.8, 95% CI 32.7-41.0, p=0.616). We did find that on average group care facilities had more new FP visits (41.5, 95% CI 36.1-46.9 and 32.3, 95% CI 29.2-35.5, p=0.004), had a higher median of long-term FP visits (18, Interquartile Range (IQR) 11-29 and 11.5, IQR 4.5-26, p=0.001), and a lower median of low birth weight births (0, IQR 0-1 and 1, IQR 0-3, p<0.001) than standard care health facilities.

Health facilities enrolled a new group of women each month with a total of 95 groups completing delivery throughout the study period. Of the 1653 pregnant women enrolled in group care at the 5 facilities, 83.8% attended at least one of the 7 group visits. Of the women who attended

one meeting, 86.6% attended the first group visit. Attendance at each subsequent visit steadily declined with the largest proportion dropping out around delivery between their 3rd and 4th visits (Figure 1). Only 6.3% of women attended their final visit occurring 4 months after delivery. Women who participated in group care were on average 24 years old and had 1.8 living children.

A total of 106 anonymous surveys were obtained from women attending their last visit of group care visit. In Table 3, we show a descriptive summary of this survey. Seventy-seven percent of women had started or completed primary school. Approximately, 66% of women reported attending 4 or more ANC visits and 91% stated they were exclusive breastfeeding at the last visit, about 4-5 months postpartum. Sixty-seven percent of women reported delivering in a health facility. Overall, 88% of these women preferred group ANC to standard ANC, but only 12% would prefer a group model for their children's well-child care. One aim of group care is to provide more women peer support throughout pregnancy and motherhood. Our survey showed that 77% of women stated that they had made new friendships through group care and 72% of women had made plans to continue to meet as a group.

Discussion

Our analysis of facility-level records showed significant improvement in some health service indicators and at minimum equivalent uptake of other health services at facilities with group ANC and WCC. Despite participants' declining attendance for postnatal and well-child care over time, family planning service uptake was higher in group care sites compared to standard care sites. Overall, we did see a positive trend between group and standard care sites for our primary outcomes, 4 or more ANC visits and for facility deliveries. These data become more interesting after analyzing attendance throughout the program. Since we know that only 84% of women who were registered for group care attended at least once and that attendance waned over time, we may see a dilution of our effect size because the group care data includes all women regardless of their enrollment status or program attendance.

To better understand women's health uptake at completion of the program, we presented findings from exit surveys performed on the last visit. When we compared responses of the exit survey to the 2014 KDHS in Busia County, we find that a larger proportion of women participating in Afya Jamii exit interviews attended 4 or more ANC visits compared to women participating in the KDHS (66.0% (56.0-74.0) to 51.3%) (Kenya National Bureau of Statistics et al., 2015). In addition, the proportion of home deliveries were reduced for women surveyed in group care compared to the KDHS, 23.5% (15.5-31.7) to 40.3%. Finally, more than twice the proportion of women who completed group care compared to the proportion of women surveyed in the KDHS exclusively breastfed to 4-5 months (90.6% (85.0-96.1) to 42.0%). Findings from community-based women's groups have achieved higher rates of exclusive breastfeeding and lower maternal and neonatal mortality compared to women not participating in community groups (Lewycka et al., 2013). If exclusive breastfeeding could also be significantly improved by facility group care, this intervention has the potential to have a significant impact on child morbidity and mortality.

Our pilot helps to demonstrate that effects on breastfeeding and uptake of health services could be obtained using group care as a health service delivery mechanism. Evidence shows that improvements in antenatal, labor, and postnatal care can lead to improvements in maternal and child mortality (Bhutta et al., 2014; Campbell, Graham, Ronsmans, Borghi, & et al., 2006). By reorganizing care into groups this intervention may provide an opportunity to improve quality and uniformity of services, improve job satisfaction, and assist in task shifting health education and group administration from health providers to CHVs (Ickovics et al., 2007; Nabudere, Asiimwe, & Mijumbi, 2011; Patil et al., 2013). We provide evidence that further controlled studies are needed to understand the effectiveness of this service delivery strategy at improving care and health for women and children.

The data collected in this pilot will also help us to improve our program. A larger proportion of women surveyed at the end of the program delivered in transit than was reported in the KDHS.

As a result, the group care curriculum will need to focus more attention on birth planning and getting to a facility in advance in order to prevent in transit deliveries. Our attendance data shows that a much larger proportion of women attended antenatal visits than postnatal visits focusing on child health. This is consistent with women's preferences for group antenatal care but individual child health care. In meetings, health providers reported that women were bringing children for immunizations at the age of 6, 10, and 14 weeks, the earliest possible age for immunization, and forgoing the group care appointment, which may fall 2 weeks earlier or later (data not shown). Due to concerns that parent's might not attend postnatal group care, providers continued to schedule children to receive their vaccines in the child health clinic in addition to the group care appointment. As a result, health providers chose to eliminate the group child health curriculum and adapt the program to a 4 antenatal and 1 postnatal visit schedule in 2015.

This evaluation had many limitations. Studies have shown that data from health information systems in SSA can be both inaccurate and incomplete and do not adequately reflect improvements in settings where rapid scale-up of interventions have taken place (Ndabarora, Chipps, & Uys, 2014). Of note, limitations with data quality existed at both group care and comparison facilities. We placed less emphasis on record keeping and more emphasis on learning how to facilitate discussions in our training of CHVs and health providers. As a result, Afya Jamii attendance records had large amounts of missing data and we were not able to report individual health uptake of all participants, specifically place of delivery and CHV 48 hour follow-up visit. In addition, CHVs failed to record when women did not attend a visit. As a result, we included missing data as non-attendance in the analysis.

The rigor of our evaluation of this pilot was limited for a number of reasons. First, implementation of the program within the larger AMPATH MCH program was time sensitive due to funding restrictions. This did not allow us to implement the program within a structured framework conducive to a prospective study. We aimed to determine whether standard care could

be adapted to group care and to determine whether implementation at multiple government health facilities with existing staff and infrastructure would be feasible in Kenya. Randomizing individual women would alter this context by a need for increased staffing for implementation. In addition, our care initiatives exist within the MOH care system, and therefore, must be implemented according to their needs. The Teso North District Health Management Team (DHMT) specifically requested that we pilot this program in particular facilities preventing the randomization of facilities and increasing the potential for selection bias. By including 9 comparison facilities, we accounted for outside influences such as national strikes and the national election, but were unable to control for confounders that may influence our results.

Conclusions

Providing care to women in groups offers unique opportunities to change health behaviors such as exclusive breastfeeding and uptake of long-term family planning while saving maternal and newborn lives (Prost et al., 2013). Much more research is needed to understand how facility-based group care can improve the health of women and children in SSA. This evaluation indicates that integrating the MOH antenatal guidelines into a group model in multiple MOH health facilities in LMICs is feasible and has the potential to improve health uptake. Re-organizing community and facility health providers' responsibilities provides a unique and cost-effective opportunity for women to come together to learn, obtain quality health services, and work as a group to improve health outcomes for themselves and their families.

Funding: This project was funded by Saving Lives at Birth, a collaboration between the United States Agency for International Development (USAID), the Government of Norway, the Bill & Melinda Gates Foundation, Grand Challenges Canada, and the UK Government.

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Appendix A: Sample Page of Afya Jamii Job Aid

1st VISIT

Mwanzo < 32 wks

Activity	Description
Introduction in Pairs	Have women talk in Pairs.Then each woman introduces the other
What is GroupCare	Explain GroupCare. Review goals of this new program. Show women their pink papered appointment sheet and go over the scheduled list of visits, including the 48 hour home CHV visit
Setting ground rules	Explain that we want this to be a space where ALL women feel comfortable, share their experiences, learn about health and make friends. Ask women to set some ground rules to ensure GroupCare is a SAFE space for all women.
GroupLearn	Does everyone have results from their ANC Profile?
GroupShare	What are discomforts people are feeling in their pregnancy? What do they FEEL? SEE? EXPERIENCE? How can these be overcome?
Place of delivery	Ask women where they plan to deliver. What are some reasons to deliver at home vs the facility? When should a woman go to the facility for delivery?
GroupDance	Facilitate a song that encourages women to rock their hips
Individual Birth Plan	How prepared are you? Review components of birth plan.
Feeling Good	Ask women what are the things that make them feel strong. What are things that bring them happiness?
GroupAffirmation	*Close your eyes think about your baby. Visualize what an ideal delivery would be. You are relaxed, you are strong, and you are prepared. You have attended all your ANC visits and have a nice support group of family and friends nearby.*

2nd VISIT

Kuendelea 32-36 wks

Activity	Description
Introduction in Triads	Have women talk in groups of 3. Each group of 3 must find out one thing that is unique about each person, and 3 things that all 3 women have in common. Then each person in the group shares one of the 3 things that the women had in common and a unique thing about one of her group members.
GroupRecall	Have each woman say something she learned during the previous session (use ball toss to facilitate everyone speaking)
GroupLearn	What is a normal blood pressure? Review the upper limit of normal 140/90
GroupShare	What are discomforts people are feeling in their pregnancy? What do they FEEL? SEE? EXPERIENCE? How can these be overcome?
Positive Labour Preparedness	Ask women how they feel about this coming delivery. Discuss any worries or anxieties. Ask women if they have had a delivery that was particularly easy, What could they suggest to help a first-time pregnant woman have an easier time during labor?
GroupDance	Facilitate a song that encourages women to rock their hips
Early and Exclusive Breastfeeding	When is the right time to start? Have a few women demonstrate how they breastfeed their babies and ask if they have ever had problems
GroupInvite	Encourage women to invite their birth companions for their next visit

Appendix B: Afya Jamii Attendance Register

Afya Jamii

Group Care for ANC, PNC and CHC

ampath Leading With Care

Mother Baby Health Network

Facility Name: ___Akichelesit Dispensary_____ Expected Month of Delivery: ___April_____

Lead Provider Name: _____ Lead CHV Name: _____

Time: _Friday 10am-1pm___

#1	#2	#3	Tahadhari
Karibu 7 months	Kuendelea 8 months	Tayari 9 months	CHV visit within 48 hours of delivery.
8-2-13	8-3-13	5-4-13	

#4	#5	#6	#7
Pongezi 2 weeks	Jipange 6 weeks	Jamii 10 weeks	Malezi Bora 14 weeks
3-5-13	31-5-13	28-6-13	26-7-13

Full Names a) Mother b) Infant	DOB or Age	AMRS #	a) ANC # b) Imm #	Date a) 1st ANC b) 1st PNV	EDD	Parity	Gravi	Village	Mobile #
1a)									
b)									
Group Visit Attendance: Please tick "Yes" if present at visit and "No" if absent	#1 ☐ Yes ☐ No	#2 ☐ Yes ☐ No	#3 ☐ Yes ☐ No	Place of Delivery ☐Facility: _____ ☐Home	CHV 48hr Visit ☐ Yes ☐ No	#4 ☐ Yes ☐ No	#5 ☐ Yes ☐ No	#6 ☐ Yes ☐ No	#7 ☐ Yes ☐ No
2a)									
b)									
Group Visit Attendance:	#1 ☐ Yes ☐ No	#2 ☐ Yes ☐ No	#3 ☐ Yes ☐ No	Place of Delivery ☐Facility: _____ ☐Home	CHV 48hr Visit ☐ Yes ☐ No	#4 ☐ Yes ☐ No	#5 ☐ Yes ☐ No	#6 ☐ Yes ☐ No	#7 ☐ Yes ☐ No
3a)									
b)									
Group Visit Attendance:	#1 ☐ Yes ☐ No	#2 ☐ Yes ☐ No	#3 ☐ Yes ☐ No	Place of Delivery ☐Facility: _____ ☐Home	CHV 48hr Visit ☐ Yes ☐ No	#4 ☐ Yes ☐ No	#5 ☐ Yes ☐ No	#6 ☐ Yes ☐ No	#7 ☐ Yes ☐ No
4a)									
b)									
Group Visit Attendance:	#1 ☐ Yes ☐ No	#2 ☐ Yes ☐ No	#3 ☐ Yes ☐ No	Place of Delivery ☐Facility: _____ ☐Home	CHV 48hr Visit ☐ Yes ☐ No	#4 ☐ Yes ☐ No	#5 ☐ Yes ☐ No	#6 ☐ Yes ☐ No	#7 ☐ Yes ☐ No

Appendix C: Figures and Tables

Table 1 Afya Jamii Exit Survey	
Questions	**Response options**
1. How far from the facility do you live?	<15 minutes, 15-30 minutes, 30-60 minutes, More than 1 hour, More than 2 hour
2. How many children do you have?	1, 2, 3, 4, 5 or more
3. What level in school did you complete?	Did not complete primary school, Completed primary school, Completed secondary school, Completed college/tertiary school
4. Where did you deliver your last baby?	Home, Facility where Afya Jamii took place, Another facility, On the way to the facility, Other
5. How many ANC visits did you attend?	1, 2, 3, 4 or more
6. Do you currently give your baby, water, soup, porridge or any other food?	Yes, No
7. Which family planning method are you currently using?	Pills, Depo (Injection), Condoms, Implanon, Jadelle, IUCD, Vasectomy, Tubal ligation, None
8. If you conceive again, how would you prefer to receive antenatal services?	Group ANC, Individual ANC
9. Have you been screened for cervical cancer?	Yes, No, I don't know what this means
10. How do you prefer getting health services for your child?	In a group, Individually
11. When do you plan to return with your child for child health clinic?	When the baby is 5 months, When the baby is 6 months, When the baby is 9 months, When the baby is 12 months, I don't know
12. Did you make friends with any of the women in your group?	Yes, No
13. Did you go to another woman's home that is in your group to visit the child or visit during pregnancy?	Yes, No
14. Have you made a plan on how to continue meeting as a group?	Yes, No

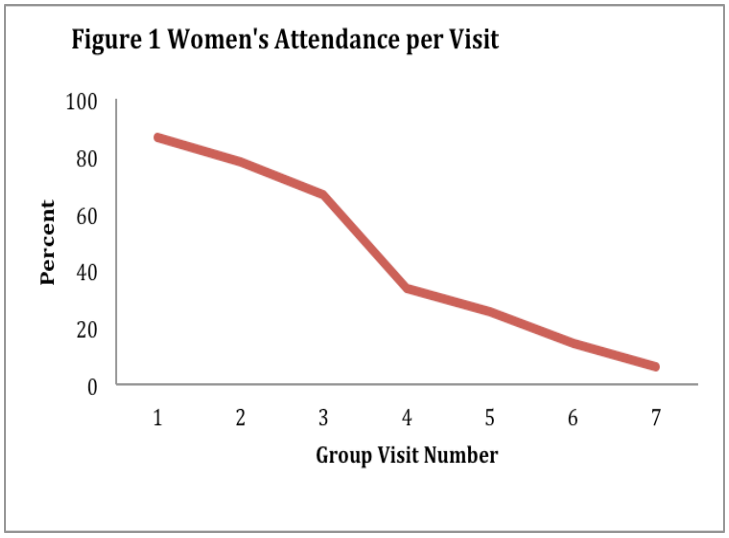

Table 2 Comparison of Monthly Uptake of Facility Visits

Demographic and Outcome variables	GC Sites	Comparison Sites	P-value
	Means (95% CI) or Medians (IQR)		
4 or more ANC visits	28.7 (25.8-31.6)	25.9 (24.0-27.8)	0.104
OPV 0	35.1 (29.7-40.6)	36.8 (32.7-41.0)	0.616
Facility Deliveries[◆]	38.7 (26.0-43.7)	34.9 (33.4-44.1)	0.460
New FP Visits[◆]	41.5 (36.1-46.9)	32.3 (29.2-35.5)	0.004
Long-term FP visits[^]	18 (11-29)	11.5 (4.5-26)	0.001
Low Birth Weight[^]	0 (0-1)	1 (0-3)	<0.001

Association performed using 2-sample t-test, [◆]T-test with unequal variances
[^]Wilcoxon Rank-Sum Test & Medians

Table 3 Exit Survey of Group Care Participants

Survey Response Categories	%(CI) N=106
Distance from facility	
<30 minutes	49.1 (39.5-58.6)
30-60 minutes	25.5 (17.2-33.8)
More than 60 minutes	25.5 (17.2-33.8)
Education Completed	
Primary school or less	77.4 (69.4-85.3)
Secondary school	13.2 (6.8-19.7)
College/tertiary school	9.4 (3.9-15.0)
Number of ANC visits	
1	1.9 (-0.7-4.5)
2-3	32.1 (23.2-41.0)
4 or more	66.0 (56.0-74)
Place of Delivery	
Home	23.5 (15.5-31.7)
Facility	67.0 (58.0-75.9)
In transit/Other	8.5 (3.2-13.8)
Exclusive Breastfeeding at 4-5 months of age	90.6 (85.0-96.1)
Long-term Family Planning	
Condoms	3.0 (-0.3-6.0)
OCPs	3.0 (-0.3-6.0)
DMPA	17.0 (9.8-24.1)
Long-term FP (IUD/Implant)	17.9 (10.6-25.2)
None	58.5 (49.1-67.9)
Preference for Group Antenatal Care	87.7 (81.5-94.0)
Preference for Group Well-Child Care	12.3 (6.0-18.5)
Made new friends through GC	77.4 (69.4-85.3)
Visited a woman's home in GC	54.7 (45.2-64.2)
Plan to continue to meet as a group	71.7 (63.1-80.3)