

Improving Utilization of Postnatal Care: Determinants and Rationale for Preference for Group Based Postnatal Care Service Delivery Initiative in Central Uganda

Introduction

Every year in Africa, at least 125,000 women and 870,000 newborns die in the first week after birth, yet this is when women and children are least likely to obtain the postnatal care they need (Warren et al., 2006). Post-natal care not only reduces maternal and neonatal morbidity and mortality in low- resource countries (Gabrysch and Campbell, 2009; Say and Raine, 2007), but also encourages positive habits in the postpartum period that pay long term dividends during childhood (Warren et al., 2006).

In Uganda, only 54% receive postnatal care within two days of delivery (UBOS & ICF International, 2017). Additionally, maternal mortality ratio stands at 336/ 100,000 live births with infant mortality at 47/ 1000 live births, of which more than half of these infant deaths (27/1000 live births) occur in the first month of life (UBOS & ICF International, 2017). Furthermore, there is a high prevalence of severe maternal morbidities and maternal near misses in Uganda (Kaye et.al, 2011, Nansubuga et.al, 2016). Without doubt, innovative strategies are required to increase uptake of postnatal care which could improve maternal and child health, thus, achieving sustainable development goal 3 targets of 70 maternal deaths per 100,000 live births by 2030 and a neonatal mortality rate of 12 per 1000 live births.

While studies of group based maternal health service provision have resulted in positive outcomes, to date, no study in Uganda/ sub-Saharan Africa have examined preference, or rationale for group based postnatal care services and its potential effect on improving utilization of postnatal care. Group based postnatal care involves a blend of individual health check coupled with group sessions/ discussions with postnatal mothers at 6 days and 6 weeks versus the traditional postnatal care visit which basically involves immunization of the baby. Therefore, this study sought to examine newly delivered mothers' preference (determinants) and rationale for choice of postnatal care model. Additionally, the study sought to collect baseline indicators to inform feasibility of implementation of a group based postnatal care initiative and assess its impact on improving utilization of postnatal care in Central Uganda.

Methodology

A cross sectional research design was employed. Quantitative data methodologies were applied to collect baseline data. Kish sampling method was used to estimate the required sample size of 406. The target population (inclusion criteria) was mothers aged 15 – 49 years who had a live birth aged below 6 weeks (42 days) during the data collection period, who had visited selected health facilities. This was a health facility exit survey involving four government health facilities stratified by location (urban/ rural) in Rakai district, Central Uganda. Two government hospitals and two lower level government facilities were selected for data collection purposes. Rakai district was purposively selected due to its poor maternal and child health indicators. Data was collected between 17th August and 17th September 2020 using computer assisted personal interviews (CAPI) using tablets. The questionnaire was programmed using Open Data Kit (ODK) software. Interviews were conducted by trained research assistants with experience in quantitative data collection. Data analysis was done using STATA 15.

The dependent variable was preference for group based postnatal care (code 1) or otherwise (code 0). The independent variables included socio-demographic, maternal health behavioural factors, self-efficacy, health literacy, maternal and child postnatal care indicators.

Additionally, open ended questions informed the rationale for the mothers' choice of preferred model of postnatal care model. These responses were coded and were analyzed based on content and emerging themes. Data analysis was done at three levels: univariate, bivariate and multivariate. Descriptive statistics were done to describe the respondents. At bivariate level, Pearson's chi-squared (χ^2) tests were used to examine the significant differences between preference for group based postnatal care and the explanatory variables. A binary logistic regression model was fitted to examine the determinants for preference for group based postnatal care and explanatory variables. Results are presented in the form of odds ratios (OR) with 95% confidence intervals of ORs.

Results

Majority of the mothers were aged between 20 – 24 years, were Catholics, Baganda, had primary education and were peasant farmers. Majority of the mothers were married and had an average of 2.7 children. Most of these mothers had more than four antenatal care visits despite the COVID-19 lockdown measures and also delivered at a health facility. Out of the 406 mothers, **72% of the mothers preferred group based postnatal care service delivery model** compared to the traditional individual model of service care model. Table 1 presents the determinants of preference for group based postnatal care model.

Mothers who belonged to households with a means of transport (bicycle, motorcycle, car/ truck) were 1.8 times more likely to prefer group based postnatal care (p value: 0.022) as compared to their counterparts. This can be attributed to having access to transport which would ease their access to health facilities to attend the group discussions in addition to the additional health check. Additionally, it also partly points to the mothers' socio-economic status which could potentially reduce financial barriers that would affect utilization of postnatal care services. Also mothers whose last pregnancy was wanted much later were 2.3 (p.value 0.025) times more likely to prefer group based postnatal care. This is possibly due to anticipated individual and group discussions on postpartum family planning which is not the case with the current mode of service delivery. Mothers with babies were aged 2 weeks, birth order 1 - 2, Pentecostals, and minority ethnicities were less likely to prefer group based postnatal care as compared to their counterparts as shown in Table 1. Women with no access to a mobile phone were also less likely to prefer group based as compared to those who had. With the integration of mHealth in service delivery, there is increased use of mobile phones in enhancing women's utilization of maternal health services. Women with phones have an option to receive reminders from health providers to attend or utilize postnatal care services unlike those without phones.

Table 1: Logistic Regression: Determinants of Preference for Group Based Postnatal Care

Preference for Group Based PNC	Odds Ratio	P>z	[95% Conf. Interval]	
Ownership of Transport means [No (Ref)]				
Yes	1.87	0.022	1.093	3.208
Pregnancy Wantedness [Then (Ref)]				
Later	2.26	0.025	1.108	4.626
Not at all	2.02	0.279	0.566	7.198
Age of Baby [0 weeks (Ref)]				
1 week	0.72	0.531	0.251	2.041
2 weeks	0.28	0.022	0.096	0.836
3 weeks	0.59	0.364	0.189	1.841

4 weeks	1.54	0.414	0.549	4.296
5 weeks	0.67	0.542	0.181	2.456
6 weeks	0.83	0.568	0.429	1.591
Educational Attainment [None (Ref)]				
Primary	1.18	0.718	0.477	2.926
Secondary+	1.28	0.619	0.484	3.379
Birth Order [3rd+ birth order (Ref)]				
1st - 2nd birth order	0.44	0.035	0.209	0.943
Age of Mother [15 - 19 (Ref)]				
20 - 24	1.45	0.378	0.637	3.281
25 - 29	0.65	0.400	0.236	1.779
30 - 34	0.71	0.583	0.212	2.389
35+	0.71	0.575	0.213	2.363
Religion [Catholic (Ref)]				
Protestant/ Anglicans	0.58	0.106	0.304	1.121
Pentecostals	0.43	0.032	0.201	0.930
Muslim	1.08	0.870	0.442	2.626
Others	0.21	0.192	0.021	2.163
Ethnicity [Muganda (Ref)]				
Munyakore	0.67	0.227	0.349	1.284
Rwandese	0.64	0.394	0.231	1.779
Others	3.51	0.033	1.103	11.142
Occupation [Peasant Farmer (Ref)]				
Trader	2.07	0.210	0.664	6.456
Housewife	1.15	0.722	0.535	2.465
Unemployed	0.86	0.760	0.314	2.333
Professional	3.20	0.084	0.855	11.986
Hair dresser	1.57	0.443	0.497	4.938
Businesswoman	1.19	0.814	0.285	4.945
Tailor	1.22	0.802	0.251	5.977
Others	3.85	0.067	0.908	16.360
Marital Status [Single (Ref)]				
Married /Living Together	0.97	0.944	0.411	2.285
Divorced/Separated	0.46	0.480	0.053	3.983
Ownership of Mobile Phone [Yes (Ref)]				
No	0.49	0.044	0.242	0.981
Intention to use Family Planning [Yes (Ref)]				
No	0.54	0.140	0.241	1.222
Don't know	0.60	0.311	0.219	1.622
Family Planning Decision making [Woman (Ref)]				
Joint decision (with partner)	1.01	0.968	0.537	1.911
Others	2.28	0.174	0.694	7.499
No. of Antenatal Care visits [Less than 4 visits (Ref)]				
4+ visits	1.48	0.167	0.849	2.576
Place of Delivery [Home (Ref)]				
Government hospital	0.43	0.195	0.118	1.548

Government Health Center	1.08	0.910	0.266	4.417
Private Hospital	4.52	0.280	0.293	69.705
Private Health Facility	0.62	0.558	0.123	3.095
Experience complications (Mother) [Yes (Ref)]				
No	1.25	0.522	0.635	2.447
Experience complications (Baby) [Yes (Ref)]				
No	1.84	0.074	0.943	3.579
_cons	1.65	0.666	0.169	16.164

p<0.05

With regards to rationale for mothers' preference for group based postnatal care, seven themes emerged. These included: more attention from health workers, peer support, sharing of experiences by mothers, financial empowerment, social networking, standardization of postnatal care services, and improved mother – health worker relations. Another notable theme that emerged was that group postnatal care model would reduce corruption tendencies of health workers as shown in the excerpt below. *“I would prefer group based postnatal care because health workers tend to ask us for money to attend to us. But when there are set days for groups to get postnatal care, the nurses will have no way of asking money from mothers!”*

In conclusion, based on the above findings, design and implementation of group based postnatal care needs to be piloted for feasibility and full scale implementation with an overall aim of improving utilization of postnatal care leading to reduction of maternal and newborn morbidity and mortality. Health workers should utilize mothers' ownership of phones during implementation of group based postnatal care in addition, discussions on postpartum family planning, financial empowerment need to be emphasized in group postnatal care discussions. Furthermore, postnatal care visits for mothers with newborns (aged less than a week) need paramount postnatal care and peer support on newborn care practices, hence validating the need for the 6 days' postnatal care visit.

References

Kaye, D. K., Kakaire, O., & Osinde, M. O. (2011). Maternal morbidity and near-miss mortality among women referred for emergency obstetric care in rural Uganda. *International Journal of Gynecology & Obstetrics*, 114(1), 84-85.

Gabrysch S, Campbell OM. Still too far to walk: literature review of the determinants of delivery service use. *BMC Pregnancy & Childbirth*. 2009; 9(1): 34.

Nansubuga E, Ayiga N, Moyer CA. Prevalence and Risk Factors of Maternal Near-Miss in Central Uganda: a Community Based Study. *International Journal of Gynecology and Obstetrics*. 2016; <http://dx.doi.org/10.1016/j.ijgo.2016.05.009>

Say L, Raine R. A systematic review of inequalities in the use of maternal health care in developing countries: examining the scale of the problem and the importance of context. *Bull World Health Organ*. 2007 Oct; 85 (10): 812-9.

Uganda Bureau of Statistics (UBOS) and ICF International Inc. 2017. Uganda Demographic and Health Survey 2016. Kampala, Uganda: UBOS and Calverton, Maryland: ICF International Inc.