

































	Yes	198	78
	Total	254	100
<b>Friends</b>	No	49	19
	Yes	205	81
	Total	254	100
<b>At Home</b>	No	204	80
	Yes	50	20
	Total	254	100

### Relationship between source of information and utilization of PNCs

The results are reported in table 7 and showed that women who go information from radio, nurse or doctors, community health workers and friends are likely to attend to postnatal care services ( P<0.001)

**Table 7. Relationship between source of information and utilization of PNCs**

Variables	Levels of PNC Services utilization				Total	x2	P-Value
		Less than 4 Standard PNC visits	4 Standard PNC visits				
<b>Radio</b>	No	186	54	240			
	Yes	4	10	14	16.802	<0.001	
<b>Nurse or Doctor</b>	No	45	0	45	18.422	<0.001	
	Yes	145	64	209			
<b>CHWs</b>	No	56	0	56	24.198	<0.001	
	Yes	134	64	198			
<b>Friends</b>	No	27	22	49	12.502	<0.001	
	Yes	163	42	205			
<b>At Home</b>	No	157	47	204			
	Yes	33	17	50	2.56	0.110	

## Discussion

### Demographic characteristics



The present study showed that participants demographic characteristics vary as far as postnatal care services are concerned. Most demographic characteristics studied are within the country range whereby for example most of the participants are below 30 years old as per population statistics, which stipulates that more than 60% of the population fall in youth category. Though most of the participants are of young age, they registered to adhere to the country policy to have health insurance, which was reported by the majority of the participants. In addition, it was worth noting that due to decentralization of health services, women do not travel a long distance to access PNCs. This research is in the line with the study by (Browne *et al.*, 2016) conducted in Ghana and highlighted that demographic and health insurance determines antenatal, delivery and postnatal care utilization, and that had demonstrated that maternal health insurance status plays a significant role in the uptake of the maternal, neonatal and child health continuum of care service. The demographic data studied in the present study were deeply studied to determine factors in others sections.

#### **4.3.2. The levels of utilization of postnatal services**

The present study report a low level of utilization of all 4 visits in comparison of WHO guidelines.

Only 25% fulfilled all four visits for postnatal care services in study setting where the study was conducted. The reported level of PNCs utilization is lower than 52.48% reported in sub-Saharan Africa, and below the average of 31.71% reported in eastern Africa region (Tessema *et al.*, 2020). It is again low compared to 70% registered to have had checkup 2 days after birth countrywide in Rwanda (National Institute of Statistics of Rwanda(NISR) Ministry of Health and The DHS Program ICF, 2020) and low compared to 53% reported in Kenya in 2014(Kenya

National Bureau of Statistics, 2014), 56% in Uganda and 66% of mothers who had check up two days after delivery in Tanzania(TDHS, 2015). On other hand, the results are close to 47% overall attendance of postnatal care service among reproductive mothers reported in Ethiopia (Wudineh *et al.*, 2018).

This difference is because the present study considered all four visits combined as an outcome variable and excluded women who did not fulfill all four visits. On the other hand , the literature found in Rwanda, Kenya, Ethiopia, Tanzania and elsewhere were focusing on only the visit 24 hours after delivery and that was considered as the level of utilization of PNCs utilization while WHO recommends that in order to have a full package, new born and mother should at least have other three visits if delivery was conducted at the health facility (World Health Organization (WHO), 2013). The current place on field is that most mothers put much emphasis on the first visit and tend to neglect the visit done by the community health workers; because they tend to rely on check-ups that are done at the health center while WHO recommendation put emphasis on the role of the community health workers to deal with mother and child health.

Further research can focus on in-depth study on the reasons behind a partial PNC services utilization and also the content of the package provided to mothers in all four visits in order to get a full picture of PNCs in the study setting for the present study.

#### **4.3.3. Factors associated with the utilization of postnatal care services**

It was worth noting that demographic and other variables play important part as far as postnatal care services utilization is concerned.

It was highlighted that marital status, ubudehe category, health insurance, mothers' education level, occupation of the mother and nature of the pregnancy and family planning were

statistically significant to be associated with the utilization of PNC services among the study participants.

The main factors explored were ubudehe category, where women who belong in category three ubudehe has reported to increase the likelihood 6 times for mothers to attend to the postnatal care services compared to those in lower income category. The results are in line with the study by (Somefun and Ibisomi, 2016) which stipulated that low wealth status are significantly associated with the non-utilization of postnatal care services. On other hand mothers age, residence were not associated with PNC visits which is different from other study that confirmed that mothers' age and urban residence significantly increased the utilization of prenatal and postnatal care but not the use of a hospital or maternity home for delivery(Bwalya, Mulenga and Mulenga, 2017; Ovikuomagbe, 2017; Dairo and Atanlogun, 2018)

Mothers education and distance to reach the health facility was associated with utilization of PNCs where shorter distance to clinics discouraged non-utilization of both prenatal and postnatal care; It was again noting that the fact that the participants are educated is associated with attendance to PNCs ; women who had planned their pregnancy had higher attendance to PNCs among the study participants and this is in line with (Ovikuomagbe, 2017) study which revealed the same and added that that acquiring at least a primary education, discouraging child marriages encourage family planning to prevent early childbearing which ultimately improve the mother health(Ovikuomagbe, 2017; Ndugga, Namiyonga and Sebuwufu, 2020).

Acquiring health insurance was not proved to be associated with the utilization of PNCs which quite different from other studies that confirmed that acquiring health insurance is a factor for utilization of PNCs(Rutayisire, & Mochama, 2020). The reason behind this difference might be linked to the fact that CBHI coverage in Rwanda has entered into the mother's culture and the

majority has it. In addition, some components of PNC visit do not require having health insurance because of being provided by the community health workers in the community. In addition, this study was conducted in one district while others covered the whole country (Rwabufigiri *et al.*, 2016).

#### **4.3.4. Main source of information regarding postnatal care services**

The reported main source of information were radio, television, newspapers, internet, nurse or doctor, CHWs, friends and at home.

The fact that mothers received PNC information was reported to be associated with the utilization of PNCs; and this showed that those who received information from radio, nurse or doctor and friends are likely to have a high level of utilization of PNCs compared to their colleagues who did not get that information. These results are supported with that fact that other studies conducted in Rwanda found similar results where the study conducted in Masaka district reported statistical relationship between mothers who received PNC information after delivery and 4<sup>th</sup> PNC standard visit and PNC visits (Williams *et al.*, 2019; Magayane *et al.*, 2020). Information access is very crucial as far as utilization of health services; therefore, mothers should be given opportunity to know the required PNC visits and its content so as its uptake is increased. Increase awareness on the package of PNCs in the community would help to increase uptake of PNCs utilization.

## **Conclusion**

The study discloses the factors influencing postnatal care among mothers attending health centres; the findings showed that there was a relationship between the socio-demographic characteristics and postnatal care attendance. Having a planned pregnancy, maternal education and high economic income had a greater influence on PNC attendance. While, women who did not receive any information about PNC were likely to miss PNC check-up.

The proportion of mothers who utilized a postnatal care check-up decreases as mothers finish the first PNC check-up thus not completing the 4th visits. Despite a higher coverage of the first PNC standard visit among women who delivered at the health facility, the 4<sup>th</sup> PNC standard visit is still low in South Kayonza District.

Lack of knowledge on package of all four visits have a negative influence on postnatal care attendance. Some respondents are not aware of the services given during postnatal care check-ups and benefits.

## **AUTHORS CONTRIBUTION**

A. D.: Conceptualized the research idea, contributed to the methods, and collected the data and its analysis as well as manuscript writing.

R.K: Supervised the work from research idea conceptualization, data management as well as manuscript writing.

C. K.: Supervised the work from research idea conceptualization, data management as well as manuscript writing.

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## CONFLICT OF INTEREST

All authors declare that no conflict of interest involves in this manuscript

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