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Barriers and facilitators to utilization of family planning among married women in Nyabiheke camp, Rwanda

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Abstract

Background Women in many refugee camps face challenges with unplanned or unwanted pregnancies. Despite the availability of family planning (FP) services in Nyabiheke camp, the utilization rate remains low. Therefore, this study explored barriers and facilitators to the utilization of FP among married refugee women in Nyabiheke camp, Rwanda.

Methods This was a case study conducted in Nyabiheke Refugee Camp. Purposive sampling was used to select 14 key informant interviews (KIIs) and 32 participants for the focus group discussions (FGDs). The KIIs included local leaders, nurses, community health workers (CHWs), religious leaders, and government officials. Five FGDs were conducted, with three groups of women and two groups of men, each discussed separately. The study used thematic analysis for data analysis.

Results The data analysis identified the following key themes: perceived benefits of family planning (FP), perceived barriers to FP, influence of family and friends, availability and affordability of FP, role of government in providing FP, and socio-cultural factors. Facilitators of FP utilization included support from spouses in decision making, the provision of free FP services in the community, and receiving information from friends. Barriers to the utilization of FP included fear of side effects, ignorance about FP, lack of motivation, lack of husband's approval, as well as religious values and cultural norms.

Conclusion Despite the availability of FP services in Nyabiheke camp, barriers continue to prevent their full utilization. Addressing these barriers and strengthening the factors that facilitate FP utilization, through community-based education and campaigns could significantly enhance the utilization of FP services in the camp.

Keywords Barriers, Facilitators, Family planning, Refugee camp, Rwanda

Introduction

Globally refugees and migrants face significant challenges while accessing health services including family planning (FP). These are multifaceted challenges that may include financial constraints, limited or no health insurance coverage, language barriers, and inadequate health policies specifically addressing their healthcare needs [1, 2]. The crisis situations that led to forced migration and displacement disproportionately impact Sexual Reproductive Health and Right among women

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and girls [3]. In a crisis, one in five women of childbearing age is likely to be pregnant [4]. Conflicts and natural disasters put these women and their babies at risk because of the sudden loss of medical support, compounded in many cases by trauma, malnutrition or disease, and exposure to violence [5]. FP has received much global attention as it can change the life of the world population positively or negatively depending on how it is applied. According to the WHO report (2018), FP is key to slowing down unsustainable population growth rates [6]. In 2019, due to the failure to use any family method, about 290 million of women of reproductive age in developing countries failed to avoid unplanned pregnancies [6, 7].

Considering challenges faced by refugees, they are particularly vulnerable to limited access to FP services and the low priority often given to FP services in crisis response programs [8]. Women in many refugee' camps struggle with unplanned or unwanted pregnancies coupled with poor spacing of these pregnancies due to their heightened risk of being sexually violated and being subjected to rape, high rates of prostitution due to widespread abject poverty in the camps [9].

Although Rwanda has shown commitment to collaborating with the UNHCR to help women and girls access FP services, the usage of FP among women refugees remains lower than that of the general population [10]. Available statistics from Nyabiheke camp show that FP usage was only 40% in 2019 [11]. This low rate FP services utilization has also been observed in other refugee camps in Eastern Africa, such as those in Uganda and Ethiopia, where studies reported rates of 30.2% and 47.7%, respectively [12, 13].

In light of the revealed family planning service utilization gap, this study aimed to explore barriers and facilitators to utilization of FP among married refugee women in Nyabiheke camp, Rwanda.

Method

Study design and setting

The study employed a case study design, which provided in-depth, contextual knowledge of FP utilization among married women in Nyabiheke refugee camp. Nyabiheke camp is located in the Eastern Province of Rwanda. The camp is home to approximately 13,103 refugees, primarily from the North Kivu and South Kivu provinces of the Democratic Republic of Congo [14]. This camp was established in 2005 and is among the oldest camps in Rwanda. Although the FP services have been provided since its establishment, utilization was still at 40% in 2019 [11].

Study population

The study population included married women and men among the refugees, community health workers and health providers offering FP services in the camp, religious leaders, local leaders, and other stakeholders from the ministry in charge of emergency management (MINEMA) and the American Refugees Committee (ARC). We purposively included participants aged 18 to 49. Since 18 is the minimum age for legal marriage in Rwanda. All participants provided written informed consent. The precise number of participants of the study was not decided beforehand but was based the saturation point. This was reached when no new information was coming out from the discussion.

Enrollment procedure

In this study, 14 key informant interviews (KIIs) were conducted with 4 community health workers, 2 health care providers, 3 local leaders, 3 religious leaders, and 2 government workers. These participants were selected based on their experience in the camp and their knowledge of the subject. In addition, 5 focus group discussions (FGDs) were conducted with 32 married women and men. The women were grouped into 3 FGDs and the men into 2 FGDs, with each group was composed of 5–8 members based on their availability on the agreed date. The selection of FGDs participants was based on the following criteria age, marital status as well as their willingness to consent and participate in the study. The participant selection process was facilitated by local leaders and CHWs who were familiar with the community.

Two research assistants were trained in data collection focusing on the study's objectives, methods, communication skills and ethical conduct to ensure the rights and dignity of participants were upheld. Both research assistants, UA and HO, hold university-level education and work as research assistants at Health Initiative Development (Rwanda). They have previous experience working on other projects related to sexual reproductive health.

UNHCR Hall was offered as a location for interviews, and it was used for focus group interviews and KIIs with local leaders. The interviews involving nurses and CHWs were conducted at the health center, while those involving government and religious leaders were conducted at their workplace. Interviews lasted between 30 and 40 min and were recorded after gaining the consent of the respondent(s). The personal identifiers (names) of the respondent were not collected to maintain participant anonymity, holding only socio-demographic information such as age, gender, and marital status.

Assessment tools

The socio-ecological model (SEM) was used in developing interview guides. This framework can be used to distinguish individuals as embedded within larger social systems and to describe the interactive characteristics of individuals and environments that underlie health outcomes [15]. This model offers 4 levels of influence specific to health behaviour such as individual level, interpersonal level, community level as well as societal level. The choice of this framework was primarily based on its flexibility, as it can be adapted to various levels. It is particularly suitable for this FP study because it helps differentiate issues at different levels of the socioecological environment that influence the utilization of FP. SEM was employed in this study to make sure the interview guide covered questions related to the individual, interpersonal, community, and social levels in understanding the complex factors influencing married refugee women's utilization of FP. At the individual level, this model was used to assess individual personal beliefs, perceptions, and attitudes toward FP. At an interpersonal level, this study used this model to understand the influence of partners, families, and peers on FP decision-making and practice. At the community level, this model was used to find out the availability, affordability, and accessibility of FP services in this refugee' camp. Lastly, at a societal level, this model was used to assess the policies that affect FP in this refugee camp, such as health education and advocacy. Also at this level, this model was used to identify sociocultural factors that influence FP practice in Nyabiheke refugee camp.

Ethical consideration

The present study was conducted in accordance with the declaration of Helsinki [16]. The ethical approval to conduct this research was obtained from the Directorate of Research and Publication of the University of Dar es Salaam (Ref No AB3/12(B)). Permission to conduct this study in the refugee settlement was obtained from the Ministry in charge of Emergency in Rwanda (MINEMA) and the local authorities in Nyabiheke Refugee Camp. All the participants who participated in this study provided written informed consent. Participants were assured that they could withdraw at any time if they wished. Furthermore, the researcher maintained confidentiality at all times during the data collection and analysis processes.

Quality assurance

To ensure the credibility, dependability, and confirmability of the data, the triangulation was ensured using the interviews among different community members, including married refugee' women, men, CHWs, nurses, religious leaders, local leaders, and government workers. The data that was collected from both FGDs and KIIs was combined to ensure a comprehensive understanding of the barriers and facilitators to the use of FP in refugee camps.

During data analysis UA, AK, and HO Independently coded a subset of the data with coding consistency. Evaluated through discussion, and discrepancies resolved through consensus. TN, is an expert in FP studies, as consulted to provide objective feedback on the theme.

Data analysis

A deductive and inductive qualitative thematic analysis was used to analyse the data obtained from the field based on the socio-ecological model. After the verbatim transcriptions and the translation of the records, the data were organised accordingly and the researchers read the entire transcript several times to familiarise themselves with transcribed translated interviews. Based on the socio-ecological model's layers, such as individual, interpersonal, community, and societal factors, a coding framework was developed, then tailored to the specific context of the refugee camp. Data from interviews and focus group discussions were then coded using these predefined codes. On the other hand, inductive analysis allowed new themes to emerge organically from the data. This was done by reading through the transcriptions and identifying patterns or recurring ideas that had not been anticipated in regard to the objectives of the study. A team of 3 people participated in the analysis, and in an iterative manner, a consensus has to be achieved for the emerging codes. This process was conducted by 3 research assistants. The final step entailed matching the verbatim quotations that reflect the meaning of quotes as well as the subthemes and themes.

Results

Participants characteristics

Most of the participants in the FGDs were aged between 30 and 39 years (40.62%), with the majority being female (62.5%). All participants had children, and 43.75% had between 1–3 children. In the KIIs, half of the participants were aged between 30–39 years and the majority were female (57.14%). The KIIs participants' positions were CHWs, nurses, government workers, local leaders, and religious leaders. Half of KIIs participants had 5 to10 years of service experience (50%) (Table 1).

Facilitators and barriers

The data analysis revealed six (6) themes of facilitators and barriers. The six (6) themes were further analyzed and fifteen (15) subthemes emerged as illustrated in Table 2.

Table 1 Participants characteristics

Participants in FGDs (32)	
Age	
20–29	9 (28.13%)
30–39	13 (40.62%)
> 40	10 (31.25%)
Sex	
Female	20 (62.5%)
Male	12 (37.5%)
Education level	
None	7 (21.9%)
Primary	12 (37.5%)
Secondary	11 (34.4%)
University	2 (6.2%)
Number of children	
1–3	14 (43.75%)
4–6	10 (31.25%
7–10	8 (25%)
Participants in KIIs (14)	
Age	
20–29	3 (21.43%)
30–39	7 (50%)
> 40	4 (28.57%)
Sex	
Female	8 (57.14%)
Male	6 (42.85%)
Education level	
Secondary	9 (64.28%)
University	5 (35.72%)
Position	
CHW	4 (28.57%)
Nurse	2 (14.28%)
Government worker	2 (14.28%)
Local leaders	4 (28.57%)
Religion leaders	2 (14.28%)
Years of services	
1–5	5 (35.71%)
5–10	7 (50%)
> 10	2 (14.28%)

Individual levels

Perceived benefit of FP The facilitators for the utilization of FP found in this refugee' camp were the perceived benefits of FP, such as the improved standard of life. Respondents perceived the usefulness of FP for married women as it allows them to have more time for breastfeeding, which in turn helps prevent deaths related to a complication during pregnancy and childbirth. Additionally, the respondent mentioned that FP helps them to prevent malnutrition.

"…., FP helps to prevent stunting and malnutrition for your children by allowing mothers to properly care for them. Additionally, it gives women opportunity to prepare physically for their next pregnancy" (P7 from Females FGD1).

Another participant narrated;

"... FP helps married women to breastfeed their babies for the recommended duration, promoting better health for the babies. Also, FP prevents and

Table 2 Main themes and categories of facilitators and barriers to utilization of FP in Nyabiheke camp

Categories			
Socioecological model levels	**Main themes**	**Sub-themes**	
		Facilitators	**Barriers**
Individual level	Perceived benefit of FP	Improved health status	
		Improved standard of life	
	Perceived barriers		Fear of side effect
			Lack of motivation
			Ignorance
Interpersonal level	Influence of family and friends	Influence of spouse in decision making toward FP	Lack of male involvement and support
		Friends as sources of information	
Community level	Availability and affordability	FP is available in the community and at health center	Lack of permanent methods
		FP is free of charge	Lack of client follow up
Societal level	Role of the government in provision of FP	Advocacy and health education	
	Socio cultural factors		Cultural beliefs
			Religion influence

reduces death and disability that can be caused by pregnancies" (Pastor from a local Church).

Participants also reported that FP gives a mother more time to care for herself and for her development, her children, and her husband. This improves their ways of living, and it has helped families to build up their savings for the future well-being of their families.

"The importance of FP for a woman is evident because she can develop herself and save some money to be used for the future well-being of her family" (P1 from Female FGD 1).

Perceived barriers of FP Participants reported perceived barriers such as fear of side effects, lack of motivation, and ignorance. Additionally, some participants believed that using modern FP methods causes heart disease, heavy menstrual bleeding, severe chronic headache, and even cancer.

"Modern methods of FP have some side effects, such as heavy menstrual bleeding, severe headaches, and sleeping disorders. Therefore, with these conditions, I don't see the advantage of FP." (P3 from females FGD 2).

A female participant added the following:

"Another reason for the non-utilization of FP is due to the fear of side effects; it is hard to convince someone who perceives that FP causes cancer; others are saying that using FP is killing your unborn baby." (P6 from Females FDG 2).

Participants also reported that ignorance was also a factor that hinders FP utilization in the refugee camp. They said that most of the refugees were not educated, so they harboured some misconceptions about FP. One of the male respondents of the focus group said:

"Most of us are uneducated and ignorant; some of us still think and believe that FP is an act of killing your unborn children." (P7 from Males FGD 1).

In addition to the fear of side effects and ignorance, there appears to be a lack of motivation to use FP among women in the refugee camp, particularly because of the porridge that is given to families who give birth.

"Married women in this refugee camp lack motivation to use FP. It may be good if the porridge flours given to women who give birth are also given to women who use FP to motivate them. Sometimes, FP usage has side effects such as heavy bleeding; therefore, it would be good at least to give women more pads to motivate them." (KII with Female CHW2).

Interpersonal level

Influence of family and friends The influence of family, specifically the husband and friends, on FP decision-making was considered a facilitator to the utilization of FP in this refugee' camp at an interpersonal level. Some women reported that they discuss FP with their husband or partner in order to gain their approval since men are consid-

ered as primary decision-makers in their families. One of the female respondents from FGD has said:

> *"FP is an agreement of the family; therefore, when a husband approves FP utilization, then the wife also uses it" (P4 from Females FDG 3).*

In addition to the husband's approval, the respondents mentioned that they get information on FP through husbands or partners, friends, neighbours, and relatives. Women in the refugee camp said that they always learned from their neighbours and their friends who became successful while using FP.

> *"Sometimes we even learn from our friends, especially other women who have been using FP." (P4 in FGD female 2).*

Lack of male involvement or husband approval As a barrier, the respondents reported that some husbands do not approve FP for their wives, and this hindered the scaling up of utilization of FP methods in the refugee A respondent said:

> *"I think it is important for couples to discuss and approve FP practices because women can't practice FP on their own; they need a husband's consent." (P4 from female FGD 3).*
> *"There are still some women who choose to use FP services on their own. This is due to the lack of their husbands' support. Women decide themselves, and they request health providers to keep it as a secret from their partners. However, this decision made by a woman alone has some consequences because whenever their partners realize that their wives used FP without consulting them, it results in family conflicts." (P6 from females FGD 2).*

Community level

Availability and affordability The availability and affordability of FP was seen as a facilitator at the community level in this study; respondents confirmed that FP services were available in the refugee camp at the health center as well as in the community. One government worker explained:

> *"FP services such as short-acting and long-acting methods, as well as counselling on FP are available here at the health centre and different FP methods such pills, condoms, injection for 3 months are also available at the community level where they are provided by the CHWs. Services of FP are available at any time needed" (KII, Head of Nurse).*

Another male respondent added that:

> *"The services of FP are freely given to our wives. The FP services are available at the health center, and they are provided in our community by CHWs. There is no distance at all because the health center is located in the camp, and CHWs are in every place inside our community. (P2 from males FGD1).*

In addition to that another female respondent said that:

> *FP services are available at health center even in our community, and the services of FP are free. However, they are not doing screening before giving us any methods. (P4 from female FGD1).*

Lack of some FP methods In this study, participants reported that they do not use permanent methods and emergency contraceptives. One of the nurses working at the health center affirmed this.:

> *"Clients who choose permanent methods such as female sterilization has their cases transferred to Ngarama hospital [where they can get such FP services" (IDI with female Nurse 2 in FP service at HC).*

In the above statement, it is clear that permanent FP methods are not available. In addition to that, participants in male FGDs raised an issue of emergency contraceptive.

> *"There is no emergency contraceptive for the women who are not on regular contraceptives." (P2 from males FGD1).*

Lack of client follow up/barriers to consistent FP services The health providers both nurses and CHWs reported that lack of client follow up due to the nature of the refugees' population which changes depending on the asylum conditions. For instance, some refugees moved on and some sought asylum in other countries such as the US and European countries and thus lead to lack of client follow up.

> *"People are migrating to neighbouring societies, and others are going to Europe or the US. This leads to challenges in the follow-up of the FP users." (KII with Female CHW2).*
> *"Some women start using FP but they migrate in neighbouring areas and stop coming back" (KII with female Nurse).*

Societal level

Role of government toward FP At the societal level, the role of government toward FP practices such as health education and advocacy was the way to increase the use of

FP in the refugees' camp. Furthermore, one of the nurses who work in FP service at the health center affirmed:

> *"We do advocacy in the community; we use the opportunity of antenatal care for pregnant women when they come for an antenatal visit; we educate them on FP so that after delivery they practice it. We even use CHWs for more advocacy at the households' level." (KII with female Nurse 2 in FP service at HC).*

Socio cultural factors Participants reported barriers that include sociocultural beliefs, which hinder FP utilization in refugee' camps. They reported that having more children means adding more value to the family and to society. Additionally, participants revealed that they also keep producing children until they get both male and female children. This highlighted some of the reasons women were not using FP. One of the respondents from health providers explained:

> *"Some people still hold on to their cultures where they perceive children as a treasure, wealth, heirs, and supporters in the future." (IDI with nurse 2 female).*
> *"Based on our culture, it is a treasure to have more children. Not only that, but also if you have children of the same gender, some of us still have behaviours of searching for another gender by giving birth every year until it happens. This hinders FP utilization. Also, in our culture if you have only girls, they consider you as someone without an heir and who does not have a child to inherit what he [the husband] left behind. Therefore, his inheritance will be given to his relatives instead of his children based on their gender." (P7 from males FGD 1).*

Religion influence Furthermore, religion influence was a barrier to the utilization of FP, because almost all the refugees have their religious affiliations and beliefs. Respondents of this study said that some people did not want to practice FP because they consider it a sin.

> *"FP is being utilized by married women refugees, but there are some women who don't want to break the promise of God because the Bible commands them to be fruitful and multiply and fill the earth." (P3 from males FGD 2).*
> *"Religion does play a negative role in the utilization of FP. Some church leaders are discouraging the use of FP as they claim FP utilization is a sin, which means that those who practice FP are sinning." (KII, official in camp).*

Discussion

This qualitative study applied the SEM model to explore the barriers and facilitators influencing married women's utilization of FP in Nyabiheke refugee camp. The analysis highlighted several key themes: perceived benefits of FP, perceived barriers, influence of family and friends, availability and affordability, the role of the government in providing FP, and socio-cultural factors. The facilitators to FP utilization among married women included the positive influence of spouses in decision-making regarding FP, having friends as sources of information, and the availability of FP services free of charge within the community. Barriers to FP utilization included the fear of side effects, ignorance about FP, lack of motivation and male involvement, as well as the influence of religion and cultural beliefs.

Individual level

At the individual level, the study found that the utilization of FP among married women in Nyabiheke was influenced by their positive perception of its benefits. This finding is in line with results from other study conducted in Ethiopia [17]. Although FP is not fully utilized, many people recognize its benefits, including birth spacing and controlling family size. These benefits lead to transformational gains for women, their families, communities, and countries, particularly in improving the health of women and children[18]. Additionally, FP offers the added benefit of improving the economic security of women, their families, and their communities [19]. These findings are consistent with those of this study, where participants reported that FP provides married women with more time to care for themselves and contribute to family development.

On the other hand, the study found that fear of side effects, ignorance, and lack of motivation were barriers to FP utilization. This finding aligns with a previous study conducted in Kenya, which identified fear of side effects as a barrier to FP usage [20]. Research by Parks et al. also found that many modern contraceptives contain hormones that can trigger side effects in some women, such as headaches, breast tenderness, weight gain, nausea, and lack of menstrual periods [21]. Consequently, the fear of side effects, combined with ignorance, hinders the use of FP [22].

Furthermore, the findings highlighted a lack of motivation as another barrier to FP utilization. Participants reported that there were no incentives for women to use FP, while women who give birth are supported by receiving porridge flour for their families. In other words, there is a greater motivation to have more children than to limit family size. Similarly, a study conducted in crisis-hit

areas of Sub-Saharan Africa found that women are often socially discouraged from using FP [22].

Interpersonal level

The findings from this study highlighted the influence of spousal input in decision-making and the role of husbands and friends as sources of information. In some cases, husbands or friends were the primary sources of advice and information before using FP. These findings are consistent with previous studies [22, 23]. Additionally, common sources of information on FP include community health workers, healthcare staff, husbands/partners, the mass media, and friends/relatives [23].

On the other hand, the study also revealed that some husbands do not approve of FP for their spouses. Due to the patriarchal norms and values prevalent in Sub-Saharan Africa, including Rwanda, men are often the primary decision-makers [24]. As previous studies have highlighted, in family setups where men decide both the number of children that the family should have and how resources should be allocated, women's utilization of family planning is hence significantly affected [25].

Community and societal level

The findings from this study indicate that the availability, affordability, and accessibility of FP services encourage individuals in need of FP to embrace their use. Similarly, previous study argues that the success of any FP program depends on ensuring the necessary supplies are accessible, available, and affordable to meet the growing demand for contraceptives [26]. This study also found that cultural beliefs serve as a significant barrier to FP utilization. In many cultures, having more children is seen as adding value to the family and society. Previous studies have shown that FP utilization is influenced by these cultural beliefs [27]. Refugees from Nyabiheke, primarily from the Democratic Republic of Congo (DRC), may facing challenges in utilizing FP due to the desire for larger families as other people from DRC [28]. In some cultures, having many children is sometimes viewed as a symbol of higher social status [29].

Religion also plays a role in FP utilization within the refugee camp. Some participants noted that practicing FP is sometimes seen as sinful. This aligns with findings from another a study by Pinter et al., which revealed that religion is deeply embedded in culture and influences morality, ideology, and decision-making, factors that can impact FP utilization [30]

On the other hand, participants highlighted the role of government interventions, such as advocacy and health education as crucial for improving FP use in the camp. The involvement of the government has been recognized as a key element in the success of family planning programs across Africa [26]. This study also suggested that community mobilization should be strengthened, particularly during events like "umuganda" (public work) and Health Week, to better promote family planning education.

Limitation and strengths

The study has several strengths, including the involvement of various stakeholders, such as local leaders, healthcare providers, and married men and women. This diverse participation enhanced the depth and reliability of the findings by triangulating perspectives from different community members and service providers. Additionally, the socio-ecological model provided valuable insights into the facilitators and barriers across multiple levels, including individual, interpersonal, community, and societal. However, since the study was conducted in Nyabiheke refugee camp, the findings may not be directly applicable to other refugee settings.

Conclusion

Although FP is available and accessible in Nyabiheke refugee camp, its utilization by married women is influenced by barriers and facilitators at the individual, interpersonal, community, and societal levels. The availability of diverse FP methods, support from friends and some spouses, and education about FP all facilitate its use in the camp. However, barriers such as fear of side effects, ignorance about FP, religious and cultural beliefs, lack of motivation, and limited male involvement hinder its utilization. Addressing these barriers and strengthening the factors that facilitate FP utilization, through community-based education and campaigns could significantly enhance the utilization of FP services in the camp.

Implication

The study emphasizes the importance of public health interventions that enhance facilitators and reduce barriers to the utilization of FP. These interventions should prioritize cultural sensitivity and community-driven campaigns to address myths and misconceptions surrounding FP. In Uganda, community-based outreach programs have contributed to increased utilization of FP [31]. Furthermore, interventions that actively engage men, such as community outreach and education, are crucial for the success of FP initiatives, as men play a key role in decision-making [32]. Implementing interventions that increase knowledge about family planning is essential, as they help reduce ignorance.

Abbreviations

SEM	Socio-ecological model
KIIs	Key informant interviews
FGDs	Focus group discussions

FP	Family planning
DRC	Democratic Republic of Congo
MINEMA	Ministry in charge of Emergency Management
UNFPA	United Nation Population Fund
WHO	World Health Organization
ARC	American refugees' committee
CHWs	Community Health workers
UNHCR	United nation high commission for refugees

Author contributions
AU: drafted the initial manuscript, subsequent revisions, and visualization AU, AK, OH: Data collection and analysis, revision of subsequent versions. AF, DL, RM: Study coordination, data curation, revision of subsequent versions. TN, AK: Conceptualization, subsequent revisions, and supervision.

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Data availability
The datasets will be made available to appropriate academic parties upon request from the corresponding author.

Declarations

Ethics approval and consent to participate
The present study was conducted in accordance with the declaration of Helsinki [16]. The ethical approval to conduct this research was obtained from the Directorate of Research and Publication of the University of Dar es Salaam (Ref No AB3/12(B)). Permission to conduct this study in the refugee settlement was obtained from the Ministry in charge of Emergency in Rwanda (MINEMA) and the local authorities in Nyabiheke Refugee Camp. All the participants provided informed written consent.

Competing interests
The authors declare no competing interests.

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