

Perceptions of Contraceptive Use and Preconception Counselling among Women with Diabetes, Hypertension, and Rheumatic Heart Disease: A Qualitative Study

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Abstract

Background

Non-communicable diseases (NCDs) pose a significant threat to maternal health. Women with NCDs should use contraceptive methods or seek preconception counselling to manage pregnancy risks. However, there is an unmet need for contraceptive use and preconception counselling among women with NCDs in Sub-Saharan Africa, including Rwanda.

Objective

The study aimed to explore the perceptions of women with NCDs regarding contraceptive use and preconception counselling in Rwanda.

Methods

A phenomenological qualitative design was employed, with data collected through in-depth interviews of 28 women with NCDs from two district hospitals. Participants were selected using purposive sampling, and thematic analysis was conducted.

Results

Two themes emerged from the analysis: (1) perceptions of contraceptive use and (2) access to preconception counselling services. Participants indicated that contraceptive use was influenced primarily by financial constraints, social and familial pressures, and religious beliefs, rather than their perceptions of pregnancy-related risks, and they also reported limited access to preconception counselling services.

Conclusions

Contraceptive use among women with NCDs is influenced by financial, social, and religious factors rather than their health conditions. Limited access to preconception counselling services is a constraint that is likely to affect maternal and neonatal health, and therefore it should be strengthened.

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Introduction

Non-communicable diseases (NCDs) are an escalating global health challenge for all age groups, particularly among women of reproductive age, where they are emerging as leading causes of ill health and a significant contributor to maternal morbidity and mortality worldwide.[1,2] This rising burden is especially pronounced in low- and middle-income countries, where it significantly impacts maternal and neonatal health.[2] Globally, NCDs account for 74% of all deaths, with a notable increase among women in this demographic.[2] Alarmingly, 17 million people die prematurely from NCDs before the age of 70 each year. Overall, 77% of all NCD-related deaths are concentrated in low- and middle-income countries.[2]

The World Health Organization (WHO) identifies four major NCDs: cardiovascular diseases, cancers, diabetes, and chronic respiratory diseases. Among these, cardiovascular diseases are the leading cause of NCD-related mortality.[2] Hypertension and diabetes are among the most common NCDs affecting women of reproductive age. [10] Evidence from a scoping review of 2022 and a cross-sectional study in Kenya of 2024 shows that NCDs are increasing in this population and are the leading cause of ill health, contributing significantly to maternal morbidity and mortality worldwide.[1,3] This increase is particularly evident on the African continent, where an article published in 2020 titled “Non-communicable Diseases and Reproductive Health in Sub-Saharan Africa: Bridging the Policy-Implementation Gaps” provides evidence that the prevalence of NCDs has doubled in many of these countries.[4,5]

Unfortunately, NCDs can profoundly impact on pregnancy outcomes, affecting both the mother and the newborn. They may lead to maternal complications such as preeclampsia, placental abruption, and cesarean delivery, as well as fetal and neonatal complications including fetal growth restriction, preterm birth, congenital malformations,

spontaneous abortion and stillbirth.[6–8] These adverse effects underscore the importance of using contraceptive use for birth spacing, as repeated pregnancies increase the risk of maternal and neonatal adverse outcomes. However, evidence highlights an unmet need for contraceptive utilization among women in Sub-Saharan Africa, particularly those with NCDs.[5]

There are different contraceptive methods, which include oral contraceptive pills, implants, injectables, patches, vaginal rings, intra-uterine devices, condoms, male and female sterilization, lactational amenorrhea methods, withdrawal and fertility awareness-based methods.[9]

Hyperglycemic disorders, including diabetes mellitus, and hypertensive disorders are common during pregnancy. [10] Hyperglycemic disorders increase the risk of maternal complications such as preeclampsia, premature birth, polyhydramnios, fetal macrosomia, and an increased need for cesarean delivery.[10] They may also result in neonatal complications, including birth injuries, respiratory distress, hypoglycemia, hypocalcemia, polycythemia, and hyperbilirubinemia. Hypertensive disorders of pregnancy increase the risk for preeclampsia, eclampsia, and the syndrome of hemolysis, elevated liver enzymes, and low platelet count (HELLP).[10,11] These NCD-related complications affecting both the mother and baby can significantly increase maternal and neonatal morbidity and mortality rates.

Given the significant risks that NCDs pose during pregnancy, the evidence emphasizes the importance of counselling women of reproductive age with NCDs on the potential consequences of pregnancy.[12] They should also be encouraged to use contraceptive methods to delay or avoid pregnancy until it is desired and the woman’s health is well-managed.[12] Effective pregnancy planning is crucial, as it allows for optimal management of NCDs both in preparation for pregnancy and afterward.[12,13]

This ensures that those in need of contraception receive tailored options, while those uncertain or desiring pregnancy are informed about the benefits of optimal preconception health. The literature further recommends that women with NCDs seek preconception care before attempting to conceive,[12, 14] which can be provided during routine visits, particularly in the gyneco-obstetric department

However, in low-income countries, including those in Sub-Saharan Africa, the practice of seeking preconception care remains limited in the general population,[15] which also affects women with NCDs. Evidence suggests that healthcare providers often do not conduct thorough preconception counselling, partly because of inadequate knowledge. For instance, a study in Malawi reported that about 95% of health workers lacked sufficient knowledge of preconception care,[16] limiting their ability to provide effective counselling. Similarly, a study in Zambia found that approximately 67% of women diagnosed with diabetes, one of the common NCDs, became pregnant without seeking preconception care.[17]

Additionally, a limited number of mothers with NCDs utilize contraceptive methods. For instance, a study conducted in Ethiopia revealed that only 34.2% of women with chronic NCDs were using contraception in 2020,[13] indicating low uptake among this particular group. Globally, the WHO reported that 77.5% of women of reproductive age had their family planning needs met with modern contraceptive methods in 2022.[18] The Sustainable Development Goal (SDG) Target 3.7 emphasises that all women should have access to contraceptive methods of their choice whenever they wish.[18]

These figures highlight a substantial gap in contraceptive utilisation among mothers with NCDs compared to global averages, even though they ideally should have higher rates of use due to their health conditions. [12,13] The low uptake likely reflects limited awareness of the need for safe and effective contraceptive options tailored to women with NCDs.

Although some studies have explored women with NCDs in developing countries, overall evidence on their perceptions of contraceptive use and preconception counselling remains limited. A study in Egypt revealed that most women with NCDs have negative perceptions of contraceptive methods, mainly due to fear of side effects. This underscores the need for healthcare providers to address these perceptions.[19] A review of the literature indicates that women with NCDs have unmet preconception health information needs, underscoring the gap in essential preconception counselling for this population.[12] Similarly, a scoping review has indicated that less than 40% of pregnant women with pre-gestational diabetes receive formal preconception care, which includes counselling.[14]

Another study revealed that only 18.9% of mothers with an NCD received preconception counselling services.[20] There is a notable scarcity of studies that have explored preconception counselling among women with NCDs in depth across the globe. In Rwanda, the prevalence of NCDs is rising, with these conditions becoming the leading cause of death in 2024, accounting for 47.7% of deaths compared to 46% of deaths in 2023.[21] Given this growing burden, understanding the perceptions of women with NCDs regarding contraceptive methods and preconception counselling services is crucial; however, this area remains underexplored.

To the best of the researchers' knowledge, no study has assessed how women with NCDs perceive contraception in Rwanda. This gap in research contributes to unintended pregnancies or shorter birth intervals among women with NCDs, potentially resulting in adverse outcomes for both mothers and babies. These consequences include preeclampsia, placental abruption, cesarean delivery, fetal growth restriction, preterm birth, congenital malformations, spontaneous abortion and stillbirth.[6–8]

Additionally, research on preconception counselling services among women

with NCDs is scarce, as a thorough search of the published literature and electronic databases revealed limited evidence. This scarcity increases the risk of unhealthy pregnancies. Therefore, this study aimed to explore the perceptions of women with NCDs regarding contraceptive use and preconception counselling in Rwanda.

Methods

Study design

We employed a phenomenological qualitative design, as it helps to describe the meaning of lived experiences from the perspective of those who experience them. In this context, women with NCDs shared their lived experiences regarding contraceptive use and preconception counselling.[22]

Study setting

The study was conducted at the NCD units of Kibagabaga district hospital and Rwinkwavu district hospital, representing urban and rural settings, respectively. These hospitals were chosen because they are known for organised NCD units, which manage cardiovascular conditions such as rheumatic heart disease (RHD), diabetes, and hypertension. Rheumatic heart disease is among the common contributors to cardiovascular diseases in low-income countries like Rwanda, [23, 24] justifying its inclusion in the study. Rwinkwavu district hospital, located in the Eastern Province, partners with a non-governmental organization called “Partners In Health (Inshuti Mu Buzima)” to provide specialised heart care. Kibagabaga hospital, in Kigali City, also offers comprehensive care NCDs, particularly heart conditions. These health facilities, like many others in Rwanda serve women of reproductive age who are affected by different NCDs that can impact pregnancy. The inclusion of both urban and rural hospitals ensured diverse representation, making these sites ideal for exploring women's perceptions of contraceptive use and preconception counselling in Rwanda.

Study population, inclusion criteria and study sample

The study population consisted of women of reproductive age (18 to 49 years) with NCDs attending NCD units in the selected study settings, targeting participants of mature age in Rwanda. Inclusion criteria were having hypertension, diabetes mellitus, or rheumatic heart disease; providing voluntary consent to participate; being under follow-up at the NCD unit of the study setting; and being aged between 18 and 49 years. Exclusion criteria were unwillingness to participate, being very ill, and inability to communicate effectively. These NCDs were chosen because they are the most common in the registries of both study settings and are managed in the NCD units of these facilities. During the period of data collection, most women of reproductive age had hypertension, followed by diabetes mellitus and rheumatic heart disease.

A purposive sampling strategy was employed to recruit participants, based on the inclusion and exclusion criteria to select the right participants. Purposive sampling was employed because it allows the selection of participants who are most knowledgeable about the phenomenon, helping to obtain rich, relevant data and enhancing the reliability and trustworthiness of the findings.[25] This helped to accurately recruit participants who could provide insights related to the study objectives.

A total of 28 women living with NCDs participated, with the sample size determined by data saturation. Saturation occurs when no new themes or insights are identified and the information begins to repeat, indicating that additional data collection was unnecessary and that an adequate sample size had been reached.[26] The selection process ensured representation from both rural and urban areas.

Data collection procedures and tools

Data were collected by five research team members, two males and three females, with backgrounds in nursing, midwifery, and medicine.

They had prior experience in qualitative data collection and held varying levels of training, specifically bachelor's and master's degrees. Each data collection session involved a data collector and a note-taker, both from the research team. Data collection occurred in August and September 2020 during working days. The average duration of each interview was 30 minutes.

Data collection was conducted in Kinyarwanda, the local language understood by most participants, which allowed them to express their thoughts freely and comfortably. Interviews were audio-recorded with participants' consent to ensure accuracy of the collected data that were transcribed verbatim later. No repeat in-depth interviews were conducted, as the information obtained from the completed interviews was thorough and adequate. The interviews took place in private rooms at hospitals to ensure participants' privacy and confidentiality. All resulting transcripts were translated into English for analysis, report writing, and manuscript preparation. Data were collected through in-depth interviews using a semi-structured interview guide. The guide, consisting of 8 open-ended questions with follow-up probes, served as a tool to facilitate discussion while allowing flexibility to explore participants' responses in depth. The development of the guide was informed by a review of the literature.[12–14, 20]

The interview guide comprised the following main questions, with additional probes used depending on the participants' responses: (1) How do you perceive health/living conditions of women with NCDs in your community?, (2) What is your perception on the family size in your community?, (3) What are your views on getting pregnant and using contraceptive methods while you have a chronic condition?, (4) Could you tell us on any influences on you to have children in the future?, (5) Have you consulted for or received any advice before getting pregnant with your chronic condition?, (6) Could you tell us how your decision about future pregnancies is balanced with

your health status of living with the non-communicable disease you have?, (7) How do you perceive advice provided to you by healthcare providers for you to have children or birth spacing?, (8) What do you suggest on provision of preconception counselling to the women with NCDs?

Data management and analysis

The qualitative data were analyzed using inductive thematic analysis, with the aid of Atlas.ti version 22 software. Four researchers were involved in this activity and they were guided by the following six steps established by Braun & Clarke:[27]

First, the research team familiarised themselves with the data by reading all 28 transcripts multiple times to identify initial patterns, which informed the generation of broad initial codes. These codes were then refined through iterative reviews, merging similar codes and removing the ones that are not clearly related to the study objectives. Next, codes were aggregated based on shared meanings to develop themes and subthemes, which were further reviewed for coherence, relevance, and alignment with the research objectives. After consolidating or removing themes as needed, the final two themes and five related subthemes were defined and named, with specific data assigned to each. Finally, a detailed report of findings was produced, serving as the foundation for manuscript preparation.

Techniques to enhance trustworthiness

To ensure the trustworthiness of the study, the researchers adhered to Lincoln and Guba's criteria: credibility, transferability, dependability, and confirmability. [28] Credibility was enhanced through prolonged engagement, with data collectors spending adequate time with participants to build rapport and understand their experiences regarding contraceptive use and preconception counselling. Reflexivity was maintained by acknowledging potential biases, and triangulation was applied by combining in-depth interviews with detailed note-taking.

Transferability was supported through thick descriptions of the study context, setting, and participant characteristics. Dependability was ensured through careful documentation of research procedures and maintaining an audit trail, while confirmability was strengthened through peer debriefing and reflexive journaling.

Ethical considerations

The Institutional Review Board (IRB) at the College of Medicine and Health Sciences (CMHS) reviewed and approved the study protocol (Approval notice No. 526/CMHS IRB/2019). The National Health Research Committee, based at the Rwanda Ministry of Health, also evaluated and granted scientific review approval (Ref: NHRC/2019/PROT/070) before data collection. Additionally, the study settings provided verbal permission to conduct the research. Prior to the interviews, each potential participant was informed about the study's aim, potential benefits and risks to participate in the study. They were informed that their involvement was entirely voluntary and that they could withdraw from the study at any time without any repercussions for themselves or their families. As the study involved recording interviews, permission to record was obtained from each participant beforehand. Each participant provided signed consent before the interview began. The researchers adhered to ethical principles governing research involving human subjects.

To protect anonymity, participants were assigned numerical identifiers to use during discussions, and no personally identifiable information was retained in the audio recordings

Results

This section presents an overview of the study's key findings, beginning with the participants' characteristics, followed by the key themes and subthemes included in the study.

Participants' characteristics

The data indicates that most participants were in the age range of 31–40 years (n=13; 46.4%). The majority of participants were from rural areas (n = 15; 53.6%), had diabetes mellitus (n = 14; 50%), were married (n = 23; 82.1%), and had attended primary education (n = 15; 53.5%), as it appears in Table 1 about characteristics of participants.

Table 1. Characteristics of participants (n=28)

Participants' characteristics	n
Age of participants (Years): N=28	
20-30	10
31-40	13
41-50	5
Location: N=28	
Rural	15
Urban	13
Patient category: N=28	
Diabetic	14
Hypertensive	4
Rheumatic heart disease patient	7
Diabetic and hypertensive	2
Rheumatic heart disease and hypertensive	1
Marital status: N=28	
Married	23
Not married	5
Level of education: N=28	
No formal education	1
Primary education	15
Secondary education	11
University	1

Themes and subthemes on perceptions of women with NCDs regarding contraceptive methods and preconception counselling

The thematic analysis resulted in two main themes and five subthemes as it appears in Table 2 below:

Table 2. Themes and subthemes that emerged from thematic analysis

Themes	Subthemes
Perceptions of contraceptive use among women with non-communicable diseases	i. Perceived financial incapacity as a motivator for contraceptive use
	ii. Perceived social and familial pressures influencing contraceptive decisions
	iii. Religious reliance as a perceived barrier to birth control adherence
Access to preconception counselling services for women with non-communicable diseases	i. Scarce preconception counselling services
	ii. Need for comprehensive and accessible preconception counselling services.

Theme 1: Perceptions of contraceptive use among women with non-communicable diseases

The first theme is about the participants’ perceptions of contraceptive use. Three subthemes emerged from this theme, and they include (1) Perceived financial incapacity as a motivator for contraceptive use; (2) Perceived social and familial pressures influencing contraceptive decisions; and (3) Religious reliance as a perceived barrier to birth control adherence.

Perceived financial incapacity as a motivator for contraceptive use

The findings indicated that women with NCDs are not particularly concerned about the complications of pregnancy when dealing with NCDs. Instead, they use contraceptive methods primarily due to

financial constraints, as they feel unable to support additional children they might have, due to increased burden:

Using contraceptive methods will depend on someone’s capacity. From like 6 months, I used to have swollen legs and become weak so that I could not do anything, yet I am alone working at my home, to find money to raise children. So, I cannot attend to them properly. I think that I cannot plan to have more children because of my financial capability. R#12, Patient with diabetes and hypertension from a rural area.

Fearing pregnancy complications was not the reason for using birth control methods. It is commonly understood that bringing children into the world without the capacity to meet their needs is a form of abuse. If you cannot provide porridge for a child, wash their clothes, take them to a healthcare facility when they are sick then you are abusing the child. R#25, Patient with diabetes from an urban area.

...If there are many children in the family, it is hard to take care of them. That is the reason why we decided to stop having more children due to the disease. If the disease comes, it becomes a problem, like in our days, where the issue of schools is very serious. Paying school fees and looking after children’s lives is not easy. That is why we made the conclusion to have only three children. Except if it happens unwillingly, there is nothing we can do about it. R#22, Patient with hypertension from an urban area.

Perceived social and familial pressures influencing contraceptive decisions

Participants indicated that many participants might avoid using contraceptive methods due to external pressure, even when facing potential pregnancy complications related to NCDs. Participants reported experiencing pressure from their husbands, neighbours, or their husband's family. In many instances, husbands insisted that their wives continue having children if they had not yet had a male child.

Neighbours also frequently exerted similar pressure. Additionally, it was noted that the community often perceives birth spacing as selfishness, even when the husband is not pushing the wife, as reflected in the following quotes:

...It is possible for someone to force you not to use contraceptive methods. For example, in my case, I have no male child. My husband might insist on continuing to have children until we have a male baby. Even neighbours advise me to keep having children, saying that maybe the next one will be a boy. R#5, Patient with rheumatic heart disease from a rural area.

“...Yes, there are people who influence me not to use contraceptive methods. For example, my parents, siblings, and friends have asked me, ‘Why are you not having children? You need to die without having children?’.” R#16, Patient with Rheumatic heart disease from a rural area.

“There is pressure from my husband's family about not using contraceptive methods. They tell me that I am cutting off the family because I am not having children ...” R#24,

Patient with diabetes from a rural area

...People say we are delaying having children and accuse us of selfishness. The community often says this, thinking we should have more children. They blame us, saying it's selfish to have only a few children. But we don't see it that way. My husband believes that our three children are enough. He doesn't push me to have more, and he's not happy about having more children. He feels satisfied with three, believing that three children are enough. R#13, Patient with Rheumatic heart disease and hypertension from a rural area.

One respondent clearly stated that her husband kept pushing her to have more children until they had a baby boy in their fifth pregnancy, after which the father decided to stop having more children:

...My husband was not stopping from forcing me to produce more children, he was telling me that giving birth is good, child is a blessing, so he decided not to force me to give birth to more children after giving birth of the fifth child who was a boy, and he then he told me to stop. R#27, Patient with diabetes from a rural area.

Religious reliance as a perceived barrier to birth control adherence

The findings indicated that some women with NCDs expressed strong reliance on religious faith and were not planning to use contraceptive methods, despite being aware of their NCDs and risks that may be associated with getting pregnant. Some even stated frankly that they ignored healthcare providers' advice to limit the number of children they have, despite the risks associated with their conditions, mentioning that only God is in control of everything:

“...I do not plan to have more children but only God is in control. If it happens that I get pregnant, I will accept it and let the baby grow.” R#6, Patient with Rheumatic heart disease from an urban area.

“.....Maybe you can be lucky you recover from the sickness recover and you can give birth. God can gift you with a child, you cannot deny because he is Almighty; children are good and blessings.” R#23, Patient with diabetes from an urban area.

On my side, all are done by God. I think five children are enough with God help I can only rise those ones. However, as all are planned by God, even if I can use those family planning methods without God's will, I can give birth again. R#10, Patient with hypertension from an urban area.

Healthcare professionals told us you can meet many difficulties including death or you can choose to do not give birth and you save your life. But I told them that I will give birth and what God has planned to me,

I can change nothing. R#11, Patient with Rheumatic heart disease from a rural area.

Theme 2: Access to preconception counselling services for women with non-communicable diseases

The second theme is about access to preconception counselling services for women with NCDs. Two subthemes emerged from this theme: (1) Scarce preconception counselling services and (2) Need for comprehensive and accessible preconception counselling services.

Scarce preconception counselling services

It was observed that providing preconception counselling services to women with NCDs is not a routine practice among healthcare providers. Most participants reported not receiving preconception counselling, except in rare cases where such services were provided upon request for information. Participants also noted that they did not receive this information, even during regular interactions with healthcare providers when attending other services:

.... At health centers in our region, no specific health care provider we can ask for information about preconception counselling services. It requires me to come and tell them I 'come for this reason'. If you just go and tell them I 'want to do family planning', it is just that, they don't consider that you have that non-communicable disease. R#25, Patient with diabetes from an urban area.

".... You get preconception counselling services only when we come for antenatal care. It's the only time you can discuss with a health care provider." R#2, Patient with diabetes from a rural area.

".....No healthcare provider I have talked with about having more children in future or the necessary adjustments I need to make according to my condition." R#15, Patient with hypertension from a rural area.

"I have never discussed about it having more children in future with a healthcare provider. I come, I take medications and go back home." R#17, Patient with diabetes from an urban area.

.....I don't have knowledge on preconception counselling services, I got disease recently, but I think even when I will get pregnant, I will do everything possible to be followed by healthcare providers, so that my child will not be born with the same condition I have. No healthcare provider I have talked with. R#16, Patient with Rheumatic heart disease from a rural area.

Need for comprehensive and accessible preconception counselling services

The findings revealed that participants expressed a strong need for preconception counselling services. They highlighted that their unique needs require special attention from healthcare providers. Additionally, they mentioned the challenges they face in deciding which contraceptive methods are suitable for their conditions and when to conceive. A lack of knowledge may prevent women with NCDs from making informed decisions regarding conception and the use of contraceptive methods, as it appears in the quotes below:

.... For us we need special counselling. We need people to be nearby us to keep counselling and explaining us about conception and use of contraceptive methods. ... Personally, I need someone who can guide me on where I can pass to get long-lasting family planning methods I can use, for example. We should get healthcare providers who teach us, so, we understand the effects of giving birth and its risks. R#4, Patient with hypertension from a rural area.

My opinion is that health care providers have to take care of us and teach us about giving birth because sometimes you can want to have a child and you be afraid because of lack of knowledge.

So my opinion is that you can teach us about the time we are pregnant and even after giving birth how we can behave. R#3, Patient with diabetes from a rural area.

Discussion

This study aimed to explore the perceptions of women with NCDs regarding contraceptive use and preconception counselling in Rwanda. The findings revealed that women with NCDs are not particularly concerned about the complications that may arise from becoming pregnant while living with these conditions. Instead, they highlighted other reasons for using contraceptive methods, which were not related to the potential health risks of pregnancy with NCDs.

Financial constraints were a major factor motivating contraceptive use among women with NCDs, sometimes even more influential than concerns about health risks associated with their conditions. This underscores the need for healthcare providers to assess reproductive-age women thoroughly and provide education on the risks and benefits of contraception for those with NCDs. Consistent with these findings, a study in South Africa reported that women perceived contraceptive use positively as a way to prevent unintended pregnancies because their families were facing financial limitations and could not afford to support another child.[29] In contrast, other studies have found that higher-income individuals are more likely to utilize contraceptive methods than those with lower incomes, [30, 31], and financial limitations can not only hinder access to contraceptives but also restrict the ability to use preferred methods. [31] This discrepancy may be attributed to differences in the types of participants, as most studies on contraceptive methods have prioritised the general population, rather than specifically focusing on those with NCDs.

Although financial constraints motivated contraceptive use in this study, social and cultural factors sometimes restricted women's choices.

In particular, external pressure from husbands, neighbours, or the husband's family led to underutilization of contraceptive methods among women with NCDs. This pressure is particularly strong in families without a male child, and in some cases, contraceptive use is perceived as selfish or as limiting the husband's family, especially within Rwandan society. This finding is not unique in the Rwandan culture because a study conducted in Nigeria revealed that husband's disapproval and culture were factors contributing to inadequate utilization of contraceptive methods.[32] Other studies also suggested that pressure from husband, family members, friends or peers may prevent people from utilizing contraceptive methods.[30,33] External pressure from husbands, family, or the community can lead women with NCDs to have more children, not based on personal choice or consideration of health risks, but due to societal expectations. This highlights the urgent need for community education on the potential complications of pregnancy for women with NCDs. Involving husbands and family members in awareness campaigns can help ensure that contraceptive methods are used appropriately, and that decisions about contraceptive use are made based on health needs rather than external pressure.

However, external pressures do not always prevent women from utilizing contraceptive methods. For example, a study in Angola found that while not all husbands actively encouraged contraceptive use, a significant proportion supported their partners in using contraception.[34] This difference may be explained by the fact that the study did not specifically target husbands of women with NCDs.

Strong religious beliefs also contributed to the underutilization of contraceptive methods among women with NCDs. Participants reported relying on God's will rather than medical advice, even when aware of potential pregnancy complications. Some stated they had no plans to use contraception in the future, believing that nothing can change what God has destined.

This reliance on divine control can override healthcare guidance and is a common factor that may similarly affect contraceptive use in the general population. The findings of this study support those from a systematic review of qualitative studies which explored barriers and motivators of contraceptive use among young people in Sub-Saharan Africa. In this systematic review, it was found that religious prohibitions are a barrier to the utilization of contraceptive methods,[30] and a study in Burkina Faso indicated that some religious leaders consider modern contraception as abortion, thus they do not favour it.[35] Similarly, a study in Sierra Leone showed a multifaceted view among religious leaders where some opposed modern contraceptive methods,[36] while the natural methods cannot be reliable for people with serious health issues like NCDs. This poses a significant risk, particularly for women with NCDs, who may face unplanned pregnancies and their associated complications. This requires comprehensive education for religious communities, particularly for women with NCDs, about the importance of limiting or avoiding pregnancies due to potential health risks and complications.

These findings are supported by other studies which revealed that only a limited number of women with NCDs receive preconception counselling services due to different factors, including limited time and knowledge among healthcare providers.[14,20] A systematic review and narrative synthesis also highlighted that women with chronic conditions have unmet preconception health information needs,[12] including counselling services.

This highlights the need for every healthcare encounter with women of reproductive age who have NCDs to include a thorough discussion of their specific risks, including the potential benefits and risks of pregnancy. Women should be carefully assessed and adequately prepared, with a clear understanding of how pregnancy may impact their health.

Given the scarcity of preconception counselling services for women with NCDs, participants emphasized the need for reliable, tailored guidance addressing their specific reproductive health needs. They expressed a desire for information from healthcare providers who can confidently support informed decisions about contraceptive use and pregnancy. This is crucial, as women with NCDs may wish to conceive, and without understanding the associated risks, they could face unforeseen complications. While women with NCDs have the right to decide whether to become pregnant, preconception counselling is essential to ensure informed choices and a healthier pregnancy. The findings of this study align with those of other studies, which indicate that women with chronic diseases want personalized preconception health information tailored to their specific diseases and needs,[12,37] and these diseases may include those that have been included in this study.

Study strengths and limitations

The strengths of this study stem from the inclusion of participants with two major categories of NCDs, diabetes mellitus and cardiovascular conditions, which are among the four major NCDs.[38] This allowed for the capture of diverse perceptions. Participants were recruited from both rural and urban areas, providing a broader perspective across different socioeconomic backgrounds. Conducting 28 in-depth interviews ensured that data saturation was achieved.

The limitations of this study include its inability to provide a full picture of the country, as it was conducted in only two district hospitals. Other facilities, such as referral hospitals, teaching hospitals, and private clinics, were not included. Further research is needed in additional settings with a larger population. While focus group discussions could have provided additional insights, in-depth interviews were employed to ensure detailed and flexible data collection while maintaining participant safety during COVID 19 restrictions.

Conclusion

This study, conducted in two district hospitals in Rwanda, explored the perceptions of women with NCDs regarding contraceptive use and preconception counselling. The findings show that financial limitations, social and familial pressures, and religious beliefs strongly influence contraceptive use among women with NCDs, rather than fear of pregnancy-related risks associated with their condition. Participants also reported limited access to preconception counselling services.

Tailored education is needed for women with NCDs and healthcare providers, emphasizing preconception risk assessment, guidance on birth spacing, and support for informed decision-making for women with NCDs. Policymakers should address existing gaps by improving the availability and awareness of preconception counselling services, ensuring that women with NCDs receive appropriate guidance to optimize maternal and child health outcomes. Further research is needed to include other categories of non-communicable diseases, investigate strategies to improve access to preconception counselling, and conduct interventional studies evaluating the effects of contraceptive use and preconception counselling on pregnancy outcomes among women with NCDs.

Authors' contributions

JN, MSM, DMR, DN, and ER made substantial contributions to the conception of the study. JN, MSM, DMR, DN, HMM, ER, EM, JDK and MCB worked on the study proposal. PHN, JN, MSM, DMR and HMM collected the data. NJ, JR, VH and VB performed the formal analysis, wrote the original draft of the manuscript, and participated in the final approval of the version to be published. All authors reviewed and edited the final manuscript.

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Availability of data and materials

The datasets of analyzed data are available from the corresponding author whenever they are needed by the relevant organ with valid request.

Consent for publication

Not applicable.

Competing interests

None declared.

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