**Perceptions of Pregnant Women on the Influence of Health Literacy in Family Planning Use: A case of Akheri Ward, Arumeru District, Arusha,Tanzania**

**Abstract**

Health literacy is critically important in reproductive health because it empowers individuals with the knowledge, skills, and confidence needed to make informed decisions about their sexual and reproductive well-being. This study assessed the Perceptions of Pregnant Women on the Influence of Health Literacy in Family Planning Use. A case of Akheri Ward, Arumeru District, Arusha-Tanzania using a cross-sectional desgin. Despite existing research on family planning in the region, the role of health literacy remains underexplored. Health literacy, defined as the ability to access, comprehend, and apply health-related information, significantly impacts reproductive health decisions. The study employed a mixed-methods approach, collecting data from 269 pregnant women and key informants through questionnaires and interviews. Findings revealed that 94.8% of respondents agreed that health literacy significantly influences family planning utilization, with 39% and 28.6% perceiving its impact as great and very great, respectively. Qualitative insights from healthcare providers emphasized the importance of education in dispelling myths and empowering individuals to make informed reproductive choices. The study concludes that enhancing health literacy through targeted education, media campaigns, community outreach and designing family plan educative programmes can improve family planning uptake, contributing to better maternal and child health outcomes.

Keywords: Health literacy, Family planning, Reproductive health, maternal , child health

1. **INTRODUCTION**

Globally, health literacy is recognized as a critical determinant of health outcomes and healthcare utilization. Health literacy refers to the ability of individuals to access, understand, and use health information to make informed decisions about their health (Liu et al., 2020). Low health literacy is associated with poor health outcomes, reduced utilization of preventive services, and increased healthcare costs. Family planning services, which are essential for improving maternal and child health, reducing unintended pregnancies, and promoting gender equality, are significantly influenced by health literacy levels (Kassim & Ndumbaro, 2022; Kim et al., 2019). According to Speizer et al, (2022), approximately 218 million women of reproductive age in developing countries have an unmet need for modern contraception, partly due to limited health literacy and access to information (Mhina, 2024; Svendsen et al., 2020).

In Sub-Saharan Africa, health literacy remains a significant challenge, with low levels of education and limited access to health information contributing to poor health outcomes (Aljassim & Ostini, 2020). The region has the highest fertility rates globally, with an average of 4.6 births per woman, and a significant proportion of women lack access to modern family planning methods (Mulatu et al., 2020; Oumer et al., 2020). Health literacy is a key barrier to the uptake of family planning services, as many women and men lack the knowledge and skills to make informed decisions about contraception. Cultural and social norms, gender inequality, and limited access to healthcare services further exacerbate the problem (Heise et al., 2019).

In East Africa, health literacy and family planning utilization vary widely across countries. While some countries, such as Kenya and Rwanda, have made significant progress in increasing contraceptive prevalence rates, others, like Tanzania, still face challenges. In East Africa, health literacy is influenced by factors such as education levels, access to media, and cultural attitudes toward family planning. Studies have shown that women with higher health literacy are more likely to use modern contraceptive methods and have better reproductive health outcomes (Liddelow et al., 2020; Maricic et al., 2021). However, misconceptions about family planning, lack of male involvement, and limited access to healthcare services remain significant barriers.

In Tanzania, the utilization of family planning services is influenced by a range of factors, including health literacy, cultural beliefs, and access to healthcare services. According to the Tanzania Demographic and Health Survey (TDHS) 2022, the contraceptive prevalence rate (CPR) for modern methods among married women is 32%, indicating that a significant proportion of women still have an unmet need for family planning (NBS, 2022). Health literacy is a critical factor, as many women lack knowledge about the types of contraceptives available, their benefits, and potential side effects. Additionally, cultural and religious beliefs often discourage the use of family planning, particularly in rural areas. The Tanzanian government has implemented various programs to improve health literacy and increase access to family planning services, but challenges remain, particularly in remote and underserved areas (Kassim & Ndumbaro, 2022; Prasad et al., 2022).

Likewise, the country has witnessed a notable increase in the utilization of modern family planning methods among women, rising from 7% in 1991 to over 30% in 2015 (Gahungu et al., 2021). Despite this progress, more than 20% of family planning needs among women of reproductive age remain unmet, and there is a high rate of contraceptive discontinuation. Geographical disparities are evident, with regions like the Lake Zone experiencing a modern contraceptive prevalence rate of 15% and an unmet need of 33% (Towongo & Kelepile, 2024)

A study conducted in Iringa, identified several factors influencing modern family planning utilization. These include marital status, parity, availability of modern family planning methods, and education level. The study emphasized the need for government investment in women's education and raising awareness about the benefits of modern family planning methods (Ngole & Joho, 2025).

In Arumeru District, located in the Arusha Region of Tanzania, is a semi-urban and rural area with a diverse population. The district faces challenges related to health literacy and family planning utilization, particularly among women in rural communities. Cultural barriers, and low levels of education contribute to low contraceptive use (Bain et al., 2021; D’Souza et al., 2022). A study conducted in Arumeru District in 2021 found that only 28% of women of reproductive age were using modern contraceptive methods, with many citing lack of knowledge and fear of side effects as key barriers (Okonofua et al., 2022). Improving health literacy in this context is crucial for increasing the uptake of family planning services and improving reproductive health outcomes.

Several studies have been conducted in Arumeru District on family planning such as (Mhina, 2024; Mhina et al., 2025). However, little is known as far as influence of health literacy on the utilization of family planning services is concern. This study, therefore assessed the influence of health literacy on the utilization of family planning services in Arumeru District, Arusha-Tanzania. Understanding the influence of health literacy on the utilization of family planning services is crucial for improving reproductive health outcomes. Health literacy affects an individual’s ability to access, comprehend, and apply health-related information, which directly impacts their decision-making regarding contraceptive use and reproductive choices. Low health literacy can lead to misconceptions, fear, and limited awareness of available family planning methods, resulting in lower utilization rates and higher risks of unintended pregnancies. Conversely, higher health literacy empowers individuals, particularly women and youth, to make informed choices, communicate effectively with healthcare providers, and adopt suitable contraceptive methods that align with their needs and cultural contexts. Therefore, promoting health literacy through education and outreach programs can enhance the uptake of family planning services, ultimately contributing to better maternal and child health and overall societal well-being.

1. **METHODOLOGY**

**2.1 Description of the study area**

The research was conducted in the Arumeru district of the Arusha region in Tanzania's northern zone adopting a cross-sectional design. The district lies in the northeastern part of the Arusha region, bordering the Kilimanjaro Region to the east and the Manyara area to the south.

The distance between Arumeru's district headquarters and Kilimanjaro International Airport (KIA) is roughly 25 kilometers. Arumeru district is one of the six districts that comprise the Arusha area. The Arumeru District occupies around 2,966 square kilometers, or 3.6 of the 82,424 square kilometers that make up the Arusha region. The district's two parliamentary constituencies are Arumeru East and Arumeru West. Arumeru District is divided into thirty-seven (37) wards, including: Bangata, Akheri, Bwawani, Ilkiding’a, Kikatiti, Kikwe, Kimnyaki, King’ori, Kiranyi, Kisongo, Leguruki, Makiba, Majiyachai, Maroroni, Mateves, Mbuguni, Mlangarini, Moivo, Moshono, Murieti, Musa, Mwandeti, Nduruma, Ngarenanyuki, Oldonyosambu, Nkoanrua, Nkoaranga, Nkoarisambu, Oljoro, Olkokola, Olturoto, Olturumeti, Poli, Sing’isi, Sokoni one, Songoro, and Usa-river.

Among the economic activities conducted in the study region are mining, forestry, beekeeping, fishing, tourism, agriculture, livestock rearing, and industry. Our position in relation to our resources, time constraints, and the characteristics of the population under study made it convenient and straightforward for the researcher to perform this study in Akheri ward.

**2.2 Target Population**

The study's target respondents included expectant mothers, and a key informant was the Arumeru District Hospital's Reproductive and Child Health Officer (RCH Officer). These were the pregnant patients who were registered at the hospital.

**2.3 Sample Size**

827 pregnant women were registered in the Arumeru district in 2023, according to the Reproductive and Child Health data from that year. Therefore, using Yamane (1967) formula a sample size of this study was determined as follows:

Mathematically, from the Yamane (1967)formulae

$$n=\frac{N}{1+N(e)^{2}}$$

Whereas:

n = samples size,

N = total population,

e = sampling error

Then: N = 827 Total population

 e = 0.05%,

 n =?

From the formula:

$$n=\frac{827}{1+827(0.05)^{\^}2}$$

$$n=\frac{827}{1+827x0.05x0.05}$$

$$n=\frac{827}{1+827x0.0025}$$

$$n=\frac{827}{1+2.0675}$$

$$n=\frac{827}{3.0675}$$

n= 269

n = 269

The sample size of this study was 269.

**2.4 Sampling Procedure**

The study employed both probability and non-probability approaches. Pregnant women were selected using the probability strategy more precisely, simple random sampling in order to calculate the sample size. Using purposive sampling, a non-probability sample technique, the hospital's Reproductive and Child Health Officer (RCH Officer) was selected as a key informant.

**2.5 Data Collection Methods**

Data were collected between February and April 2024 using the following methods:

**2.5.1 Interview**

The study employed an interviewing methodology to collect data from the key informant. The tool's questions were designed to collect data regarding the methods employed to raise pregnant women's health literacy regarding family planning in Akheri Ward.

**2.5.2 Questionnaire**

The study used questionnaires to collect data from pregnant women because they provided a rapid, simple, cost-effective, and efficient way to collect a lot of data from a wide sample of respondents. This survey was conducted in-person to improve communication with the respondents and, in turn, the response rate. There were closed-ended questions throughout the poll to gather quantitative data. The respondents were permitted to respond to the closed-ended questions by choosing suitable answers from the list.

**2.6 Data Analysis**

Prior to data entry, the information gathered from original sources was meticulously examined and modified to find and fix any mistakes. After that, it was coded, assembled, and examined. Descriptive statistics were used to process quantitative data using programs like the IBM Statistical Package for Social Sciences (SPSS) version 23. Content analysis was used to examine the qualitative information provided by key informants. A variety of tables, figures, charts, and narratives were used to convey the results, providing thorough explanation and insightful information.

1. **RESULTS AND DISCUSSIONS**

**3.1 Demographic Characteristics of Respondents**

The results in Table 1 show that the ages of the respondents are split into two categories. The age range of the lowest group is over 47 (9.3%) and 42-47 (10%), while the largest group is 24-29 (27.5%), followed by 30-35 (21.9%) and 18-25 (21.6%). This implies that younger respondents (those under 35) make up over 70% of the population surveyed. Family planning education is particularly crucial for this group as the majority of its members are of reproductive age. Younger people might be less opposed to modern family planning services than older groups, but they might also not fully comprehend them (Mushy et al., 2020). Priority should be given to targeted education for this age group, but efforts should also include the needs of the older cohort, which may have different tastes or knowledge levels due to generational differences.

Similarly, Table 1's findings indicate that respondents' educational attainment falls into two categories. While the largest group had secondary education (22.3%) and university-level education (33.5%), the lowest group had primary education (14.5%) and non-formal education (11.9%). Higher education levels appear to be prevalent in this sample, as over half of the respondents had secondary, postsecondary, or university-level schooling. Given that many respondents may have greater cognitive ability and access to knowledge, this implies that awareness campaigns may be more complex and cover technical aspects of family planning services. However, the fact that 26.4% of respondents had only finished primary or non-formal education implies that those with lower levels of education need more accessible and user-friendly communication tools.

**Table 1. Demographic characteristics of respondents**

|  |  |  |
| --- | --- | --- |
| **Variable (n = 269)** | **Frequency** | **Per cent** |
| Age of respondents | 18-25 | 58 | 21.6 |
| 24-29 | 74 | 27.5 |
| 30-35 | 59 | 21.9 |
| 36-41 | 26 | 9.7 |
| 42-47 | 27 | 10 |
| More than 47 | 25 | 9.3 |
| Total | 269 | 100 |
| Education Level | Primary education | 39 | 14.5 |
| Secondary education | 60 | 22.3 |
| Tertiary | 48 | 17.8 |
| University level | 90 | 33.5 |
| Non formal education | 32 | 11.9 |
| Total | 269 | 100 |
| Marital status | Single | 108 | 40.1 |
| Marriage | 114 | 42.4 |
| Divorced | 33 | 12.3 |
| Widow | 14 | 5.2 |
| Total | 269 | 100 |
| Occupation | Farmer | 67 | 24.9 |
| Business | 95 | 35.3 |
| Employed | 62 | 23 |
| Others | 45 | 16.7 |
| Total | 269 | 100 |

Furthermore, the statistics in Table 1 show that the greatest group of respondents are single (40.1%), followed by married (42.4%), and the smallest group is composed of widows (5.2%) and divorced (12.3%). The virtually equal proportion of married and single respondents shows that family planning information needs to be addressed across a range of lifestyles. While single people could require education on the use of contraception to prevent unintended pregnancies, married people might concentrate more on family planning to limit or space out children. Since they could have unique needs, such as planning for future relationships or their health after a spouse passes away, divorced and widowed persons shouldn't be overlooked in awareness programs. A lower fraction (16.7%) of respondents depend on other kinds of income, whereas the majority (35.3%) and 24.9% of respondents, respectively, make their living from farming and business. Given that a sizable section of the population works in the business and agricultural sectors, it is crucial to disseminate family planning information through channels that specifically target these industries. While farmers, especially those in rural regions, might be better addressed by focused agricultural initiatives or rural development programs, business professionals might gain from community outreach programs or integration with agricultural extension services.

In a similar vein, urban clinics or workplace health initiatives are more effective in reaching business people. A one-size-fits-all approach to family planning education would be inadequate due to the diverse range of occupational categories (Fauser et al., 2024; Kristiansen et al., 2023). More relevance and reach will be ensured by promoting health family planning through channels catered to professional lives (Adaki & Nsofor, 2023; Hazra-Ganju et al., 2023).

**3.2 Perceptions of Pregnant Women on Influence of Health Literacy on the Use of Family Planning Services**

Figure 1 shows that 94.8% of respondents agreed that health literacy influences the use of family planning services, while 5.2% of respondents stated that health literacy has no influence on the use of family planning services

Fig 1- Perceptions of Pregnant Women on Influence of Health Literacy on the Use of Family Planning Services

Regarding the influence of health literacy on the use of family planning services, the findings indicate that 255 respondents (94.8%) agreed that health literacy plays a significant role in the utilization of family planning services, while 14 respondents (5.2%) stated that health literacy has no influence on family planning use. These findings suggest that health literacy has a substantial impact on the adoption of family planning within the community, particularly among individuals of childbearing age. Providing adequate health literacy can serve as a motivating factor in increasing the uptake of family planning services.

A study conducted by Ahmed and Seid (2020) supports these findings, reporting that planned health campaigns consistently yield positive effects. Their study concluded that mass media campaigns significantly influence how health services are utilized. Given the crucial role of media in promoting health and well-being, policymakers should consider strengthening media-driven health literacy initiatives to enhance public awareness and improve the utilization of family planning services.

In addition to the quantitative results, qualitative insights from key informant interviews further reinforce the importance of health literacy in the adoption of family planning services. A Reproductive and Child Health (RCH) Officer emphasized the critical role of awareness and education in shaping reproductive health decisions:

"Many community members, especially women of childbearing age, are more likely to embrace family planning when they receive accurate and comprehensive information. Misinformation and cultural misconceptions often hinder adoption, but when individuals are educated about the benefits, safety, and available options, they feel empowered to make informed choices for their reproductive health."

These qualitative findings align with the survey results, where the majority (94.8%) of respondents acknowledged the significant influence of health literacy on family planning utilization. The insights suggest that strengthening educational initiatives, particularly through community health programs and outreach efforts, can enhance awareness and ultimately improve the uptake of family planning services.

* + 1. **The extent does health literacy influence the use of family planning services**

Figure 2 illustrates the extent to which health literacy influences the use of family planning services. The findings reveal that 39% of respondents indicated that health literacy has a great influence on the utilization of family planning services, while 29.4% of respondents stated that the influence is at a medium level. Additionally, 28.6% of respondents believed that health literacy has a very great influence on family planning service usage. In contrast, a small proportion of respondents 1.1% perceived the influence of health literacy to be minimal, whereas only 0.4% of respondents reported that health literacy has no influence at all on family planning service utilization.

These findings suggest that the majority of respondents recognize health literacy as a critical factor in shaping family planning decisions, with a significant portion acknowledging its strong or very strong impact. The relatively low percentage of respondents who perceived little or no influence indicates that awareness and knowledge about reproductive health play a key role in promoting the adoption of family planning services. Strengthening health literacy initiatives, particularly through targeted educational campaigns, may further enhance the effective use of family planning services and improve reproductive health outcomes within the community.

**Fig 2-The extent does health literacy influence the use of family planning services**

In addition to the quantitative results, qualitative insights from key informant interviews further underscore the significant role of health literacy in the adoption of family planning services. A Reproductive and Child Health (RCH) Officer highlighted the importance of continuous education and awareness campaigns in improving family planning utilization:

"In my experience, many individuals hesitate to use family planning services due to myths and misinformation. However, when they receive proper health education, they begin to understand the benefits and feel more confident in making informed reproductive health choices. Our role as healthcare providers is to ensure that accurate information reaches the community, as knowledge truly empowers people to take control of their reproductive health."

These qualitative insights align with the survey findings, where a substantial proportion of respondents (39%) recognized health literacy as having a great influence, and 28.6% perceived it as having a very great influence on family planning service usage. The findings suggest that investing in health literacy initiatives, such as community health talks, mass media campaigns, and personalized counselling, can further strengthen the uptake of family planning services. Enhancing these efforts may help address misconceptions and encourage more individuals to make informed decisions regarding their reproductive health.

Focusing on the extent to which health literacy influences the use of family planning services, the findings indicate that 105 respondents (39%) agreed that health literacy has a great influence in persuading the community to utilize family planning services. Additionally, 79 respondents (29.4%) stated that health literacy has a medium level of influence, while 77 respondents (28.6%) believed that health literacy has a very great influence in encouraging the community to adopt family planning services. Conversely, a small percentage of respondents 3 (1.1%) perceived the influence of health literacy to be minimal, whereas only 1 respondent (0.4%) stated that health literacy has no influence at all on persuading the community to use family planning services.

These findings suggest that the majority of respondents recognize health literacy as a significant factor in promoting the adoption of family planning services, with most agreeing that its influence is either great or very great. This highlights the vital role of health literacy in shaping reproductive health behaviors, particularly in influencing pregnant women and individuals of childbearing age to use family planning services. The relatively small number of respondents who perceived little or no influence further emphasizes the strong correlation between health awareness and the utilization of reproductive health services. Strengthening health literacy programs through targeted education and awareness campaigns may therefore enhance community engagement and improve the uptake of family planning services.

A study conducted by Mgaya and Mgonja (2023) in Iringa, Tanzania supports these findings, emphasizing that health literacy and awareness of family planning methods play a crucial role in influencing the use of family planning services. The study revealed that a significant majority 94 respondents (94%) reported being well-informed about various family planning methods and demonstrated positive attitudes and awareness regarding contraceptive use. Furthermore, the study highlighted that the perceived usefulness of family planning has increased due to the contribution of health literacy. This suggests that improving knowledge and awareness through targeted educational programs can further enhance the acceptance and utilization of family planning services within communities.

**Beyond the quantitative results,** qualitative insights from key informant interviews further reinforce the significant role of health literacy in the adoption of family planning services. A Reproductive and Child Health (RCH) Officer emphasized the need for continuous education and outreach efforts to enhance awareness and encourage informed decision-making:

"Many individuals, particularly women of childbearing age, are willing to use family planning services but often lack sufficient knowledge about their benefits, safety, and available options. Through targeted health education and counselling, we have seen a positive shift in attitudes, where more people feel empowered to make informed reproductive health choices. Strengthening health literacy programs is essential in dispelling myths and misconceptions that often hinder the uptake of family planning services."

These qualitative insights align with the survey findings, which indicate that a majority of respondents (39%) believe health literacy has a great influence on family planning adoption, while 28.6% perceive it as having a very great influence. The results highlight the need for sustained health education initiatives, particularly at the community level, to ensure that individuals have access to accurate and reliable information. Strengthening these efforts through mass media campaigns, peer education, and healthcare provider-led sessions may further improve the utilization of family planning services and contribute to better reproductive health outcomes within the community.

1. **Conclusion**

The findings of this study strongly indicate that health literacy plays a crucial role in influencing the utilization of family planning services. A significant majority of respondents (94.8%) agreed that health literacy has a substantial impact on family planning adoption, highlighting the importance of providing accurate and accessible information to individuals of childbearing age. The study also revealed that the extent of health literacy’s influence varies, with 39% of respondents stating that it has a great impact, while 28.6% perceived it as having a very great impact. These results suggest that improving health literacy can significantly enhance family planning uptake by empowering individuals with knowledge, reducing misconceptions, and promoting informed decision-making.

Qualitative insights further reinforced these findings, with RCH Officers emphasizing the need for continuous education and awareness campaigns to address misinformation and cultural barriers. Health professionals observed that individuals who receive proper health education are more confident in using family planning services. Strengthening health literacy programs through community outreach, media campaigns, and personalized counselling can therefore enhance reproductive health outcomes. Policymakers and healthcare stakeholders should prioritize targeted education strategies to ensure that individuals have access to reliable information, ultimately increasing the effective utilization of family planning services in the community.

**Ethical Approval And Consent**

**During data collection, ethical principles were strictly observed throughout the research process. Informed consent was obtained from all participants after clearly explaining the purpose, procedures, potential risks, and benefits of the study in a language they understood. Participation was entirely voluntary, and participants were assured of their right to withdraw from the study at any stage without facing any consequences. Due to the sensitive nature of family planning and reproductive health issues, strict measures were taken to ensure confidentiality and privacy, including anonymising responses and securely storing all data. Particular attention was given to avoid any form of coercion, especially among women. The research was conducted with full respect for cultural values and community norms to ensure respectful and ethical engagement. Prior to data collection, the study received ethical clearance from a recognized Institutional Ethics Review Committee, and necessary permissions were obtained from relevant local authorities in accordance with national and local research regulations.**

**Disclaimer (Artificial intelligence)**

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

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