Contraceptive practices among women of reproductive age in Mbeya, Tanzania

Yina Hamis¹, Elias Kaminyoge², Clement Mweya¹³*

¹Mbeya College of Health and Allied Sciences, University of Dar es Salaam, P.O Box 608, Mbeya, Tanzania
²Department of Obstetrics and Gynaecology, Mbeya Zonal Referral Hospital, P.O. Box 419, Mbeya, Tanzania
³Mbeya Medical Research Centre, National Institute for Medical Research, P.O Box 2410, Mbeya, Tanzania

Abstract

**Background:** Non-utilisation of contraceptives contribute to unintended pregnancies and unsafe abortions, which are major public health problems in Tanzania and sub-Saharan Africa. Our study investigated contributing factors and contraceptive use practices among women of reproductive age in Mbeya, Tanzania.

**Methods:** A hospital-based descriptive cross-sectional study was conducted on women attending reproductive and child health clinics. Data obtained included participants’ age, education and other demographic characteristics. Awareness of family planning methods, use, attitudes, advocacy and practices were also recorded. A χ² test was used to examine the association between selected variables.

**Results:** A total of 217 respondents participated in the study, of which the majority were between the ages of 21 and 26 (mean age = 26.96, standard deviation = 1.37). The majority of the respondents, 157 (72.4%) were married with mostly 1-2 children and had a primary school education or without formal education, 155 (71.4%). 191 (88.0%) respondents had heard about at least one contraceptive for family planning. Injectable was the most known method of family planning, as reported by 158 (72.8%) participants. Awareness about family planning methods and use was significantly associated with educational level (χ² = 43.01, \( p = 0.0002 \)).

**Conclusion:** Our study shows awareness and willingness to use family planning methods in Mbeya. Hence, it promotes a better life for families. However, more studies are needed to thoroughly investigate the various reasons affecting some non-utilisation of family planning and how these can be addressed.

**Keywords:** Contraceptive practices, women, reproductive age, Mbeya, Tanzania

*Correspondence: mweya.clement@udsm.ac.tz

Introduction

Non-utilisation of contraceptives leads to approximately 80 million women globally (Bearak et al., 2018; Singh et al., 2010) and 14 million in sub-Saharan Africa (Hubacher et al., 2008; Silumbwe et al., 2018) having unplanned pregnancies annually. Consequently, cause 45 million women globally end up in abortions, and more than half a million die from complications associated with pregnancy, childbirth, and postpartum (Calvert et al., 2013). Sub-Saharan Africa produces a total of 7.9 million teenage pregnancies; of this, only 53% were planned, with the rest ending in 16% miscarriages, 13% abortions and 18% unplanned births (Bearak et al., 2018; Hubacher et al., 2008; Singh et al., 2010). Unplanned pregnancies cause several risks, such as maternal death, unsafe abortion, malnutrition, mental illness and transmission of HIV to children (Baschieri et al., 2017; Calvert et al., 2013). Studies have revealed that behavioural practices influencing unintended pregnancies include knowledge of contraceptive use, socioeconomic status and other socio-demographics including marital status, age and level of education (Darroch & Singh, 2013; Muanda et al., 2017).

The use of contraceptives for family planning aims to improve the health of mothers and children by providing safe family planning methods, which can assist clients in planning their families. The primary purpose of any family planning programme is to provide reversible methods
for child spacing and more permanent methods for couples intending to stop childbearing (Butler & Clayton, 2009). In Tanzania, the utilisation rate of contraceptives among women of the reproductive age group is 38.4%, whereas in the Mbeya region is 17%, according to the National Bureau of Statistics (Safari et al., 2019). This low utilisation of contraceptives in Mbeya predisposes women between 15 to 45 to have unwanted pregnancies, anaemia, infections and maternal deaths (Bwana et al., 2019). Contraceptives allow women to prevent unplanned pregnancies during and after unprotected sexual intercourse. In Tanzania in 2010, 34% of all pregnancies were unplanned (Keogh et al., 2015; Mosha et al., 2013). Unplanned pregnancies have economic, social, psychological and physical implications for the mother and the unplanned child. Unplanned pregnancies, especially in teenagers, have led to poverty, as pregnant teenagers often leave school early (Askew et al., 2016; Hultstrand et al., 2019; Sawhill et al., 2014; Sutton et al., 2018). Physical implications, especially in those below the age of 19 years, include hypertension, anaemia, obstructed labour and haemorrhages.

There is a need for continued public health intervention to prevent unplanned pregnancies using contraceptives whereby improving and saving women's lives and their unborn children. It is estimated that the number of modern family planning in various regions in Tanzania is 12% (Safari et al., 2019). Most studies show women to be aware of contraceptive use, but they do not use them for family planning (Damian et al., 2018; Mosha et al., 2013; Yussuf et al., 2020). This study was carried out to examine the current practices of family practice in Mbeya. It was also intended to explain why certain women of reproductive age (15-45 years) aware of current contraceptive methods did not utilise them. Findings from this study will help Mbeya Regional Health Management Teams and Council Health Management Teams in improving the utilisation of contraceptives for family planning.

Materials and methods

Study site
This study was conducted on women attending the Reproductive and Child Health (RCH) clinic at Ruanda Health Centre (RHC) and Mbeya zonal referral hospital (MZRH) in Mbeya, southern Tanzania. Both RHC and MZRH provide family planning services. The study was performed from July to December 2020. The latitude of the Mbeya region is -8.909401, and the longitude is 33.460773 in southern Tanzania. RHC serves the administrative ward of Ruanda, which has a population of 19,959 people (URT, 2013), whereas MZRH received referrals from the Southern Highland regions of Tanzania, which are Ruvuma, Iringa, Songwe, Mbeya, Rukwa and Katavi with a total population of about 8.7 million people (URT, 2013).

Study design
This descriptive, hospital-based cross-sectional study was conducted on women attending the reproductive and child health services in selected sites in Mbeya, Tanzania.

Sample size estimation
The minimum sample size (N) required for this study was 217 participants. Which was calculated using a formula for cross-sectional studies \( N = \frac{Z^2 \times P \times (1-P)}{e^2} \) (whereby the recent prevalence of contraceptive use in Mbeya (P) of 17% was used (Pourhoseingholi et al., 2013).

Data collection
The researchers collected the data via a Swahili version self-administered questionnaire to respondents seeking family planning services at RCH and MZRH. Information on how to complete the questionnaire was provided. The questionnaire was distributed to those who expressed an interest in participating and provided instructions on completing it. The questionnaire’s key points were explained. All women aged 15 to 45 who consented to participate in the study were included to reach the estimated sample size. Pre-testing of questionnaires was conducted with 30
respondents, and it was found that the questions were straightforward, with no ambiguity or confusion. Their level of education, age, marital status, occupation, and religion were all recorded as well as their awareness, attitude, and usage of contraception. Participants were assured of confidentiality and using the information obtained solely for research purposes.

Data analysis
The data were statistically analysed using IBM SPSS Statistics 19.0. (IBM Corp., Armonk, NY, USA). The descriptive statistics for categorical variables were expressed in numbers and percentages. Chi-square or Fisher's exact tests were used to determine the association, and it was considered significant when the p-value was less than 0.05.

Ethical consideration
Before participating in the study, written informed consent was sought and obtained from all participants. Ethical approval was obtained from the University of Dar es Salaam, Mbeya College of Health and Allied Science ethics sub-committee. Permission to conduct the study was also taken from the regional and district administration.

Results
Socio-demographic characteristics of the study participants

Two hundred seventeen clinic attendees were asked to participate in the study, and all agreed to indicate a 100% response rate. As seen in Table 1, most participants were between the ages of 21 and 26 (mean age = 26.96, standard deviation = 1.37). The majority of the respondents, 157 (72.4%), were married with mostly 1-2 children. Most study respondents, 155 (71.4.1%), had a primary school education or without formal education.

Table 1: Socio-demographic characteristics of recruited participants (N=217)

| Variable            | Factor         | Frequency (%) | X² (p-value) |
|---------------------|----------------|---------------|--------------|
| Age                 | 15-20          | 36 (16.6)     |              |
|                     | 21-26          | 70 (32.3)     |              |
|                     | 27-32          | 66 (30.4)     |              |
|                     | 33-38          | 40 (18.4)     |              |
|                     | 39-45          | 5 (2.3)       |              |
| Marital status      | Married        | 157 (72.4)    |              |
|                     | Single         | 40 (18.4)     |              |
|                     | Divorced       | 10 (4.6)      |              |
|                     | Cohabit        | 10 (4.6)      |              |
| Level of education  | No formal education | 60 (27.6) |              |
|                     | Primary education | 95 (43.8)    |              |
|                     | Secondary education | 53 (24.4) |              |
|                     | Higher education | 9 (4.1)       |              |
| Number of children  | No child       | 5 (2.3)       |              |
|                     | 1-2            | 110 (50.7)    |              |
|                     | 3-4            | 77 (35.5)     |              |
|                     | 5 or more      | 25 (11.5)     |              |

Awareness about contraceptives
Out of the 217 women of reproductive age who participated in the study, 191 (88%) respondents reported having heard about at least the use of one contraceptive (Figure 1A). Injectable was the most known method of family planning, as reported by 72.8% of participants, followed by pills
(68.7%) and implants (62.2%), whereas the Intra Uterine Device (IUD) was the least known method (12%) (Figure 1B). The primary source of information about contraceptive use was reported as being nurses, 98 (45%), followed by friends, 51 (23.5%), as shown in Figure 1C. Awareness about family planning methods and use was significantly associated with educational level ($\chi^2 = 43.01$, $p < 0.0002$).

Figure 1: A: Who heard and those who did not hear about any contraceptive B: Who knows about any contraceptive C: Source of information about family planning.

Advocacy and attitudes on contraceptive use
Findings related to contraceptive use among women of reproductive age in Mbeya town, Tanzania, showed that 109 (50.2%) would advocate contraceptives for family planning, whereas 108 (49.8%) would not advocate the use of contraceptives. The primary reason for not advocating
contraceptives was causing excessive bleeding and other menstrual problems by 36 (16.6%) respondents. Other reasons for not advocating contraceptives include Cannot prevent pregnancy by 2 (0.9%) respondents, causing cancer and believing condoms are infected with HIV; each of these responses had 5 (2.3%) respondents, as shown in Figure 2.

![Figure 2: A. Who would advocate the use of contraceptives B. Reasons for not advocating contraceptive use?](image)

**Practices on contraceptive use**

Findings showed that 174 (80%) respondents used contraceptives at least once. The majority of study participants, 149 (68.7%), agreed to have discussed family planning with their husbands or partners, whereas 68 (31.3%) reported not agreeing to involve their husbands or male partners. 135 (62.2%) agreed to continue using contraceptives in the future for family planning. Only 87 (40%) respondents used contraceptives during previous intercourse with their partners, as indicated in Figure 3. Findings from this study show an association between older age and the use of contraceptives for family planning ($\chi^2 = 36.09, p < 0.0003$). In general, findings from our study indicated that Injectable was a preferable contraceptive method, as shown in Figure 4.
Discussion

Our study found that contraceptives among women of reproductive age in Mbeya city are relatively high. The majority of respondents had heard about at least one contraceptive, of which Injectable was the most known method of family planning, which is similar to the findings obtained from other studies which were done in Mali and Columbia, showing that 86% and 95% respectively, respondents had heard about at least one modern contraceptive either condom, pills or Intra.
Injectable as the means of contraception was the most known method (72.8%), unlike the findings in a study done in Cameroon (Nansseu et al., 2015) revealed that the most used was the male condom (96%). This could be explained that the condom is feasible to use and convenient to obtain compared to others (Tung et al., 2013).

Findings from this study indicate that most (68.7%) of the respondents have ever discussed family planning issues with their partners and want to use them in the future. These findings were similar to those found in a study done in Ethiopia (Tilahun et al., 2013). The possible reasons could be health education on contraceptive use given all over the media and hard life where it has become difficult to raise children (Wodajo et al., 2017). On the contrary, 42.1% of the respondents never discussed family planning issues with their partners and never wanted to use them in the future. This was also found in southern Ethiopia (Kusheta et al., 2019), whereby about 41.2% of participants never used and discussed using them. Possible misconceptions could explain the underutilisation of family planning methods, as most think they will be infertile if used. It is encouraged and emphasised that both partners participate in family planning rather than leaving the burden to women only as the main participants. More emphasis on partners about the benefits of using contraceptives in family planning and the disadvantages of not using family planning, especially regarding social-economic and maternal health deteriorations due to grand malt parity and more family planning campaigns about practices and sessions should be conducted.

Our study indicated that 40% of the respondents were active users of contraceptives, which is higher than a study done in Nigeria (Onwuzurike & Uzochukwu, 2001), which revealed that 20.5% of the respondents were active users of contraceptives (Onwuzurike & Uzochukwu, 2001). Most women in this study who completed primary and secondary education practised family planning, similar to the survey done in India (Ramakrishnan et al., 2017). This might be because women who were able to read and write would think that family planning activities are helpful to be economical, self-sufficient, and more likely to acquire greater confidence and personal control in marital relationships, including the discussion of family size and contraceptive use.

Our study showed that the awareness and attitude of women in the reproductive age group related to family planning utilisation were high. Those reproductive-age women who had good awareness utilised family planning better than those with less awareness. Those participants with favourable attitudes practised better than those who had unfavourable attitudes. This might be because awareness and attitude toward specific activities are the key factors to start behaving and maintaining it continuously. According to the study by Abdulai et al. (2017), a condom is used to reduce the likelihood of pregnancy and the spread of sexually transmitted diseases (STIs) such as HIV. A male condom blocks semen from entering the body of a sexual partner. The advantages of using this method are that it is immediately reversible. This method is suitable for couples who have sex infrequently. It is free of charge and inexpensive, protects against STIs, has no medical or hormonal side effects, and requires no clinic or doctor visits. Using condoms as a method of contraception can enable men to take responsibility for preventing pregnancy and disease (Abdulai et al., 2017). The main disadvantage that couples have highlighted is interrupting sexual intercourse when there is condom failure. The male condom has a 2% failure rate for perfect use and 15% for typical usage.

Conclusion
Findings indicated a significant contribution of awareness, attitude and practices towards contraceptive utilisation for family planning in the southern highland zones of Tanzania. Our study provides evidence that most women of reproductive age in Mbeya, Tanzania, are aware of the family planning methods and are willing to use them at least once in their lifetime. However, more studies are needed to thoroughly investigate the various reasons affecting some non-utilisation of family planning and how these can be addressed.
Acknowledgements
We thank the study participants, women of reproductive age in Mbeya. We also thank the regional and district health authorities for permitting the study. This manuscript is part of the report as full participation for the Doctor of Medicine of the University of Dar es Salaam (UDSM) of YH, who would like to thank all who helped make the study possible, including the University of Dar es Salaam and Mbeya Zonal Referral Hospital administration. Finally, we thank the Tanzania Higher Education Student's Loan Board (HESLB) for financially supporting this project.

Author contributions
YH, EK and CNM designed the study. YH conducted and contributed to data analysis. YH, EK and CNM interpreted the data. CNM prepared the original manuscript. All co-authors contributed to subsequent revisions. All authors read and approved the final manuscript.

Funding
The study was carried out as part of a Doctor of Medicine (MD) research project by the first author (YH) at the University of Dar es Salaam. The Project received financial support from the Tanzania Higher Education Student's Loan Board (HESLB).

Conflict of interest
The authors declare that they have no competing interests.

References
Abdulai, M.A., Baiden, F., Afari-Asiedu, S., Gyabaa-Febir, L., Adjei, K. K., Mahama, E., Tawiah-Agyemang, C., Newton, S. K., Asante, K. P. & Owusu-Agyei, S. (2017) The Risk of Sexually Transmitted Infection and Its Influence on Condom Use among Pregnant Women in the Kintampo North Municipality of Ghana. Journal of Sexually Transmitted Diseases 2017. https://doi.org/10.1155/2017/8642685
Askew, I., Khosla, R., Daniels, U., Krause, S., Lofthouse, C., Say, L., Gilmore, K. & Zeid, S. (2016) Sexual and reproductive health and rights in emergencies. Bulletin of the World Health Organization 94(5), 311. https://doi.org/10.2471/BLT.16.173567
Baschieri, A., Machiyama, K., Floyd, S., Dube, A., Molesworth, A., Chihana, M., Glynn, J. R., Crampin, A. C., French, N. & Cleland, J. (2017) Unintended Childbearing and Child Growth in Northern Malawi. Maternal and Child Health Journal, 21(3), 467-474. https://doi.org/10.1007/s10995-016-2124-8
Bearak, J., Popinchalk, A., Alkema, L. & Sedgh, G. (2018) Global, regional, and subregional trends in unintended pregnancy and its outcomes from 1990 to 2014: Estimates from a Bayesian hierarchical model. The Lancet. Global Health 6(4), e380-e389. https://doi.org/10.1016/S2214-109X(18)30029-9
Butler, A. S. & Clayton, E. W. (2009) Overview of Family Planning in the United States. In A Review of the HHS Family Planning Program: Mission, Management, and Measurement of Results. National Academies Press (US). https://www.ncbi.nlm.nih.gov/books/NBK215219/
Bwana, V. M., Rumisha, S. F., Mremi, I. R., Lyimo, E. P. & Mboera, L. E. G. (2019) Patterns and causes of hospital maternal mortality in Tanzania: A 10-year retrospective analysis. PLOS ONE 14(4), e0214807. https://doi.org/10.1371/journal.pone.0214807
Calvert, C., Baisley, K., Doyle, A. M., Maganja, K., Changalucha, J., Watson-Jones, D., Hayes, R. J. & Ross, D. A. (2013) Risk factors for unplanned pregnancy among young women in Tanzania. The Journal of Family Planning and Reproductive Health Care 39(4), e2. https://doi.org/10.1136/jfprhc-2012-100389
Damian, D. J., George, J. M., Martin, E., Temba, B. & Msuya, S. E. (2018) Prevalence and factors influencing modern contraceptive use among HIV-positive women in Kilimanjaro region, northern Tanzania. Contraception and Reproductive Medicine 3(1), 7. https://doi.org/10.1186/s40834-018-0060-2
Darroch, J. E. & Singh, S. (2013) Trends in contraceptive need and use in developing countries in 2003, 2008, and 2012: An analysis of national surveys. *Lancet (London, England)* 381(9879), 1756–1762. https://doi.org/10.1016/S0140-6736(13)60597-8

Hubacher, D., Mavranzeouli, I. & McGinn, E. (2008) Unintended pregnancy in sub-Saharan Africa: Magnitude of the problem and potential role of contraceptive implants to alleviate it. *Contraception* 78(1), 73–78. https://doi.org/10.1016/j.contraception.2008.03.002

Hultstrand, J.N., Tydén, T., Jonsson, M. & Målqvist, M. (2019) Contraception use and unplanned pregnancies in a peri-urban area of eSwatini (Swaziland). *Sexual & Reproductive Healthcare: Official Journal of the Swedish Association of Midwives* 20, 1–6. https://doi.org/10.1016/j.srhc.2019.01.004

Keogh, S. C., Kimaro, G., Muganyizi, P., Philbin, J., Kahwa, A., Ngadaya, E. & Bankole, A. (2015) Incidence of Induced Abortion and Post-Abortion Care in Tanzania. *PLOS ONE* 10(9), e0133933. https://doi.org/10.1371/journal.pone.0133933

Kusheta, S., Bancha, B., Habtu, Y., Helamo, D. & Yohannes, S. (2019) Adolescent-parent communication on sexual and reproductive health issues and its factors among secondary and preparatory school students in Hadiya Zone, Southern Ethiopia: Institution based cross-sectional study. *BMC Pediatrics* 19(1), 9. https://doi.org/10.1186/s12887-018-1388-0

Mosha, I., Ruben, R. & Kakoko, D. (2013) Family planning decisions, perceptions and gender dynamics among couples in Mwanza, Tanzania: A qualitative study. *BMC Public Health* 13(1), 523. https://doi.org/10.1186/1471-2458-13-523

Muanda, M. F., Ndongo, G. P., Messina, L. J. & Bertrand, J. T. (2017) Barriers to modern contraceptive use in rural areas in DRC. *Culture, Health & Sexuality* 19(9), 1011–1023. https://doi.org/10.1080/13691058.2017.1286690

Nansseu, J. R. N., Nchinda, E. C., Katte, J.-C., Nchagnouot, F. M. & Nguetsa, G. D. (2015) Assessing the knowledge, attitude and practice of family planning among women living in the Mbouda health district, Cameroon. *Reproductive Health* 12(1), 92. https://doi.org/10.1186/s12978-015-0085-9

Onwuzurike, B. K. & Uzochukwu, B. S. C. (2001) Knowledge, Attitude and Practice of Family Planning amongst Women in a High-Density Low Income Urban of Enugu, Nigeria. *African Journal of Reproductive Health / La Revue Africaine de La Santé Reproductive* 5(2), 83–89. https://doi.org/10.2307/3583433

Pourhoseingholi, M.A., Vahedi, M. & Rahimzadeh, M. (2013) Sample size calculation in medical studies. *Gastroenterol. Hepatol. Bed Bench* 6(1), 14–17.

Ramakrishnan, K. G., Venkateswar, K. N. & Vijayshree, M. (2017) Assessing the knowledge, attitude and practice of contraception in rural India: A necessary step in achieving population control. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology* 6(8), 3328–3331. https://doi.org/10.18203/2320-1770.ijrcog20173174

Safari, W., Urassa, M., Mtenga, B., Changalucha, J., Beard, J., Church, K., Zaba, B. & Todd, J. (2019) Contraceptive use and discontinuation among women in rural North-West Tanzania. *Contraception and Reproductive Medicine* 4(1), 18. https://doi.org/10.1186/s40834-019-0100-6

Sawhill, I. V., Karpilow, Q. C. & Venator, J. (2014) *The Impact of Unintended Childbearing on Future Generations.*/paper/The-Impact-of-Unintended-Childbearing-on-Future-Sawhill-Karpilow/91f9e048e83d831cd3748abffbe5a168cd0547f6

Silumbwe, A., Nkole, T., Munakampe, M. N., Milford, C., Cordero, J. P., Kriel, Y., Zulu, J. M. & Steyn, P. S. (2018) Community and health systems barriers and enablers to family planning and contraceptive services provision and use in Kabwe District, Zambia. *BMC Health Services Research* 18(1), 390. https://doi.org/10.1186/s12913-018-3136-4

Singh, S., Sedgh, G. & Hussain, R. (2010) Unintended pregnancy: Worldwide levels, trends, and outcomes. *Studies in Family Planning*, 41(4), 241–250. https://doi.org/10.1111/j.1728-4465.2010.00250.x
Sutton, M. Y., Zhou, W. & Frazier, E. L. (2018) Unplanned pregnancies and contraceptive use among HIV-positive women in care. *PloS One* 13(5), e0197216. https://doi.org/10.1371/journal.pone.0197216

Tilahun, T., Coene, G., Luchters, S., Kassahun, W., Leye, E., Temmerman, M. & Degomme, O. (2013) Family Planning Knowledge, Attitude and Practice among Married Couples in Jimma Zone, Ethiopia. *PLOS ONE* 8(4), e61335. https://doi.org/10.1371/journal.pone.0061335

Tung, W.-C., Hu, J., Efird, J. T., Su, W. & Yu, L. (2013) HIV knowledge and condom intention among sexually abstinent Chinese students. *International Nursing Review* 60(3), 366–373. https://doi.org/10.1111/inr.12039

URT. (2013) *Population and housing census 2012: Population distribution by administrative units. Volume 1*. National Bureau of Statistics.

Wodajo, L. T., Mengesha, S. T. & Beyen, T. K. (2017) Unsafe abortion and associated factors among women in reproductive age group in Arsi Zone, Central Ethiopia. *International Journal of Nursing and Midwifery* 9(10), 121–128. https://doi.org/10.5897/INM2017.0286

Yussuf, M. H., Elewonibi, B. R., Rwabilimbo, M. M., Mboya, I. B. & Mahande, M. J. (2020) Trends and predictors of changes in modern contraceptive use among women aged 15–49 years in Tanzania from 2004–2016: Evidence from Tanzania Demographic and Health Surveys. *PLOS ONE* 15(6), e0234980. https://doi.org/10.1371/journal.pone.0234980