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Factors associated with uptake of postpartum family planning services in Dodoma City Council, Tanzania: A cross-section study

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Abstract
Background: Postpartum family planning is very essential to mothers' health. However, its utilization remains low in developing countries.
Objective: To determine the proportion and factors associated with uptake of PPFP services in Dodoma Tanzania.
Methods: A cross-sectional study employing a quantitative approach was conducted among women who gave birth one year before the study period (June 2020) in Dodoma city council. A two-stage sampling technique was employed to recruit a total number of 209 participants. An interviewer-administered questionnaire was used to collect data. Data were entered and cleaned using Epi Info 7 and later exported to and analyzed using SPSS version 25.0. Bivariate and multiple logistic regression models were employed during data analysis. Odds ratios with 95% confidence intervals were computed to identify factors associated with postpartum family planning.
Results: Majority (53.6%) of women used contraceptives within one year after delivery. Three factors were significantly associated with the uptake of postpartum family planning. Lower odds for uptake of PPFP were found among self-employed women (AOR: 0.5, 95% CI 0.25–0.74) and unemployed women (AOR: 0.2, 95% CI 0.05–0.31) when compared with employed women. Using community health fund insurance (AOR: 2.4, 95% CI 1.09–6.42) and National Health Insurance Fund (AOR: 2.7, 95% CI 1.54–5.99) as a mode of payments for health had higher odds for uptake of PPFP compared to cash mode. Women with an adequate number of antenatal care visits had higher odds (AOR: 2.9, 95% CI 1.24–6.89) of uptake of PPFP compared to women with an inadequate number of antenatal care visits.
Conclusion: The uptake of PPFP among women was not adequate and was associated with being employed, being covered by health insurance, and adequate antenatal care visits. More interventions are needed to enhance PPFP use among women.

***Keywords**: postpartum, family planning, uptake, Tanzania, Dodoma*

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Background

Globally family planning is recognized as a key life-saving intervention for mothers and their children (1). The consequences of not using family planning include high levels of unintended pregnancies, and this is especially being observed in low and middle-income countries. Unintended pregnancies have implications for the health and well-being of women and children (2). Furthermore, short birth intervals harmfully affect the health of mothers and the survival of their children.

Similarly, the risk of the death of a child increases if the interval between the birth of the child and the previous birth is less than 24 months (2). For instance, when a mother becomes pregnant soon after childbirth, she is more likely to develop several complications (3). World Health Organization recommends waiting for at least 24 months period before the mother becomes pregnant to reduce the risk of adverse maternal, prenatal, and infant outcomes (1).

Postpartum Family Planning (PPFP) prevents unintended pregnancy and closely spaced pregnancies through the first 12 months following childbirth (4). The postpartum period is a time when many routine interventions are provided to mothers and during this period, most mothers want to delay or stop the next pregnancy (5). On contrary, closely spaced pregnancies within the first year after delivery increase the risks of preterm birth, low birth weight, and small-for-gestational-age babies. The risk of child mortality is the highest for very short birth-to-pregnancy intervals that are less than 12 months (2).

PPFP plays a vital role in preventing unintended pregnancies and reducing maternal and child mortality. It promotes the health of mothers and children by expanding the inter-pregnancy interval and helps to avoid financial, psychological, and health costs due to unplanned pregnancies (6). However, following childbirth women frequently initiate sex before starting contraception henceforth leading to the risk of unintended pregnancies (7). Furthermore, many families overlook the utilization of modern family planning methods due to negative perceptions, difficulty in accessing services, and sociocultural factors such as taboos and dependent on males' decisions (8).

Global and national policies have refocused attention on PPFP as an important intervention to guarantee health outcomes for women and infants. For instance, Tanzania National Health Policy 2007 emphasizes the use of PPFP. Also, National Population Policy 2006 recognizes the need to educate women about the importance of PPFP. International Extended Maputo Plan of Action on sexual and reproductive health and rights 2016 -2030 emphasizes the importance of PPFP. The postpartum period is an important period to intervene in improving access to family planning services. Evidence suggests that spacing pregnancies appropriately could help prevent adverse perinatal outcomes and that PPFP use is of supreme importance (1,9). However, Nigussie and colleagues (2016) found that there is a limited utilization of PPFP services (10).

Efforts have been made in Tanzania through the Ministry of Health, in collaboration with non-Governmental organizations to improve the quality of postnatal care among women. Dodoma Region is among the prioritized regions for the interventions of PPFP in Tanzania. The successes have been obtained in awareness of PPFP services in the country such as integrating PPFP services in other health interventions such as HIV/AIDS, family planning, and maternal and child health that are implemented in the Dodoma Region. Despite all these efforts uptake of PPFP remains low in Tanzania. The proportion of postpartum women using PPFP and associated factors is not well known. Therefore, this study aimed to determine the proportion and factors associated with the uptake of PPFP services among women in Dodoma city, Tanzania.

Materials and Methods

Study design

This study employed a cross-sectional design with a quantitative approach for data collection.

Study Area

The study was carried out in Dodoma city which is the capital city of Tanzania. The region has a total number of 60 facilities providing reproductive and child health services to women. According to data available in district health information systems (DHIS2), only six of all facilities in Dodoma provide PPFP services.

Study population

The study population was women of reproductive age (15–49 years) who had a live birth one year before the survey and have lived in Dodoma City for at least one year. This population was selected

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because they are active in childbearing and targeted to use PPFP for childbirth spacing. We excluded all women who were in the postpartum period but were critically ill during the study.

Sample Size

The sample size was determined by using the formula for cross-sectional prevalence studies (11). The proportion (p) of 10.4% (12) of women using postpartum family planning, 95% confidence interval, and marginal error (e) of 4.5% were used as inputs for sample size computation which gave a minimum sample size of 177. This sample size was finally adjusted for an expected non-response of 15 resulting in a sample size of 09. The formula used is given below= $\frac{\left(Z_{\alpha/2}\right)^2 p(1-p)}{e^2}$

Therefore, a total of 209 eligible women were recruited from four health facilities (Hombolo health center, Kikombo health center, Makole health center, and Chamwino DTC dispensary). To obtain the number of eligible women to be sampled from each selected facility, the monthly average catchment for the last three months was computed then a probability proportional to size was applied to allocate women to be recruited per each selected facility (Table 1).

Table 1: Sample size allocation to different health facilities

S/N	Facilities selected	Quarterly average catchment	Proportion	n
1.	Makole HC	4163	0.47	98
2.	Hombolo HC	863	0.098	20
3.	Kikombo HC	351	0.04	9
4.	Chamwino DTC Disp	3422	0.389	82
Total		**8799**	**1**	**209**

Data collection method

Data were collected in June 2020 by using an interviewer-administered questionnaire. The information collected included socio-demographic characteristics, reproductive variables, and information on the use of modern family planning methods.

Data Processing and analysis

Data cleaning, categorization, and coding were done after data collection using EPI-info. Data were then exported to IBM SPSS version 20 for analysis. Descriptive analysis was performed, and results were summarized using frequency tables. Binary logistic regression was done to identify factors associated with the uptake of PPFP. Further multivariable logistic regressions were run for all variables with a p-value less than 0.2 to obtain adjusted odds ratios (AOR). All analyses were set at a 5% level of significance.

Results

Socio-demographic, reproductive characteristics ,and contraceptive use among study participants

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Among all 209 participants recruited, about half of them, 101 (48.3) were aged between 25 -34 years. Most women 179 (85.7%) were married. More than half, 114 (54.5%) had less than secondary level education. More than half of the respondents, 109 (52.2%) were self-employed. Most of the women, 131 (62.7%) reported paying their health bills through cash mode. Most women had a parity of 2-4 children. In terms of the utilization of ANC services, most women (82.3%) had an adequate number of ANC visits as per WHO recommendations (4 and above visits). Among those with at least one ANC visit, 176 (85.4%) received PPFP counselling during their visits.

Overall, more than half of the study participants (53.6%) reported using modern contraceptives use during postpartum. Injectable and implant contraceptive methods were reported to be used by many women (31.2% and 28.6% respectively). The time to use contraceptive methods was reported by many women (72.3%) between 6-12 months after birth (Table 2).

Table 2: Socio-demographic, reproductive characteristics, and contraceptive use among study participants

Variable	Frequency	Percent
Age Group		
15 – 24	81	38.8
25 – 34	101	48.3
35 – 49	27	12.9
Marital Status		
Not married	30	14.4
Married	179	85.6
Level of Education		
Non-formal	19	9.1
Primary	95	45.5
Secondary+	70	33.5
Tertiary	25	11.9
Occupation		
Employed	17	8.1
Self-employed	109	52.2
Unemployed	52	24.9
Others	31	14.8
Mode of Payment		
Cash	131	62.7
CHF	34	16.3
NHIF	30	14.4
Other insurance	14	6.7
Parity		
1	74	35.4
2 – 4	120	57.4
5+	15	7.2
Number of ANC visits		
0	3	1.4
1– 3	34	16.3
4+	172	82.3
PPFP counseling during ANC visits		
Yes	176	85.4
No	30	14.6

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Variable	Frequency	Percent
Modern contraceptive use		
Yes	112	53.6
No	97	46.4
Contraceptive methods used		
Condom	15	13.4
Pills	10	8.9
Injectable	35	31.2
Implant	32	28.6
IUCD	5	4.5
Other	15	13.4
Time to use contraceptive methods after delivery		
Within 6 months	31	27.7
Between 6 to 12 months	81	72.3

Factors associated with uptake of postpartum family planning services

In the univariate analyses, three factors (occupation, mode of payment, and ANC visits) were found to be significantly associated with the uptake of postpartum family planning services. The odds for uptake of PPFP were lower for self-employed women (COR: 0.5, 95% CI 0.24–0.97) and unemployed women (COR: 0.1, 95% CI 0.04–0.33) when compared to employed women. Women who reported paying for health services using CHF (COR: 2.8, 95% CI 1.22–6.21), and NHIF (COR: 2.9, 95% CI 1.14–6.28) had higher odds for uptake of PPFP compared to women who reported paying via cash. Women who had an adequate number of ANC visits (4 and above) had higher odds (COR: 2.1, 95% CI 1.01–4.55) of uptake of PPFP compared to women with an inadequate number of ANC visits (less than 4). In the multivariable logistic regression analysis, only three variables were included and all of them were still found to be significantly associated with uptake of PPFP. We only observed a little change in the magnitude of the odds ratios and confidence intervals as indicated by the adjusted odds ratios (AOR) in Table 3.

Table 4: Estimates of crude odds ratios (COR) and adjusted odds ratios (AOR) for uptake of PPFP services

Variable	% taking family planning	COR [95% CI]	p-value	AOR [95% CI]	p-value
Age (years)					
15 – 24 (ref)	54.3	1			
25 – 34	54.5	1.0 [0.56, 1.81]	0.986		
35 – 49	48.2	0.8 [0.33, 1.87]	0.578		
Marital Status					
Married (ref)	53.6	1			
Not married	53.3	1.0 [0.46, 2.15]	0.976		
Level of Education					
Non-formal (ref)	47.4	1			
Primary	50.5	1.1 [0.42, 3.04]	0.802		
Secondary	60.0	1.7 [0.60, 4.62]	0.326		
Tertiary	52.0	1.2 [0.37, 3.97]	0.761		

Variable	% taking family planning	COR [95% CI]	p-value	AOR [95% CI]	p-value
Occupation					
Employed (ref)	71.2	1			
Self employed	58.9	0.5 [0.24, 0.97]	0.172	0.5 [0.25, 0.74]	0.016
Unemployed	52.1	0.1 [0.04, 0.33]	<0.001	0.2 [0.05, 0.31]	<0.001
Others	22.6	0.7 [0.15, 1.41]	0.054	0.8 [0.05, 1.28]	0.064
Mode of Payment					
Cash (ref)	46.6	1		1	
CHF	70.6	2.8 [1.22, 6.21]	0.015	2.4 [1.09, 6.42]	0.032
NHIF	70.0	2.9 [1.14, 6.28]	0.024	2.7 [1.54, 5.99]	0.005
Other	42.9	0.9 [0.28, 2.62]	0.792	1.0 [0.30,3.24]	0.981
Parity					
1 (ref)	48.7	1			
2-4	56.7	1.4 [0.77, 2.47]	0.277		
5+	53.3	1.2 [0.40, 3.67]	0.741		
Number of ANC visits					
0-3 (ref)	38.2	1		1	
4+	57.0	2.1 [1.01, 4.55]	0.048	2.9 [1.24, 6.89]	0.014
PPFP counseling during ANC					
Yes (ref)	55.1	1			
No	46.7	0.7 [0.33, 1.55]	0.392		

Discussion

Postpartum family planning utilization within one-year post-delivery

In this study, more than half of the respondents reported utilizing modern contraceptives during the postpartum period. The finding of this study corroborates other studies conducted in other places, for example, the study conducted in Hosanna town (5) and another one carried out in Addis Ababa (13) and rural Kenya (14). The difference might be due to the socio-economic characteristics of participants, the time of the study, and variation in reproductive characteristics. For example, the study conducted in Hosanna town (2018) with almost all respondents (97%) were married (5) whereas the study conducted in 2020 two years later with 85% of married women among the study respondents.

Another reason may be the difference in age of participants whereby most study respondents in the Hosanna study were aged between 25 – 34 years whereas in this case less than half of women had the same age category. It was revealed that study findings on age for women in this study are higher in percentages than those conducted in Uganda (28%) in 2015, Gondar (48.4%) in 2015, and Northern Ethiopia (48.0%) in 2017, and that conducted in Burie District, Ethiopia (20.7%) in 2020 (13–16). Also, the difference in time of the study may be one of the reasons for the difference.

Factors associated with PPFP services utilization

Contrary to other studies that showed the significant association between age, education level, marital status, and PPFP utilization (5,10,13,16), this study revealed different variables which are

women's source of income, the number of ANC visits, and mode of health services payment to be statistically significantly associated with PPFP utilization. The source of income showed a statistically significant association with PPFP utilization. This can mean that sources of income can determine the access and willingness to pay for health services. Antenatal care visits are another variable that showed a significant association with PPFP utilization among women in Dodoma City. This might be caused by the fact that women attending ANC are more exposed to information about reproductive health and PPFP services compared to those who do not attend or attend fewer visits (16,17).

Additionally, findings from this study showed that women with health insurance (CHF and NHIF) are more likely to receive PPFP than those who use cash and another payment mode. This is because women with CHF and NHIF might not be worried about different health expenses that they might pay at the clinic as they can be covered by their insurance.

The modern contraceptive knowledge was relatively high in this study but below the study conducted in Hosanna town (2018) which showed that almost all respondents knew at least one modern family planning method (5). Almost all study participants delivered at the health care facilities for their last birth were exposed to PPFP. This is comparable to the study conducted in Debre Tabor town, Ethiopia in 2018 which showed that facility delivery was 97.4% (19).

Most respondents reported deciding with their partners on the utilization of PPFP services and men were ready to discuss the utilization of modern contraceptive methods within one year after delivery. This finding is consistent with the study conducted in Ethiopia whereby most women reported discussing and jointly deciding with their partners on PPFP utilization (18).

Conclusion and recommendations

The uptake for PPFP utilization among women attending health facilities within one year postpartum was low and was strongly associated with women's source of income, the number of antenatal visits, and mode of health services payment. It is recommended that the government and other stakeholders should think of different public health interventions such as awareness campaigns targeting women of reproductive age with messages focusing on the benefits and importance of PPFP utilization.

Ethical Issues: Ethical clearance was obtained from the Institutional Review Board of Muhimbili University of Health and Allied Sciences (MUHAS). Further permission to collect data was obtained from the local authorities. Written consent from all respondents was sought before participating in this study. All information was kept confidential, with names excluded from the recorded materials to avoid giving away the identity of the participants. This study involved those under 18 but have 15 years or above with a child, so this category of participants consented to be involved in this study on their own.

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References

WHO. WHO recommendations on postnatal care of the mother and newborn [Internet]. 2013 [cited

2021 Feb 23]. Available from: https://www.who.int/maternal_child_adolescent/documents/postnatal-care-recommendations/en/

Agida T, Akaba G, Ekele B, Adebayo F. Unintended pregnancy among antenatal women in a tertiary hospital in North Central Nigeria. Niger Med J. 2016;57(6):334.

Sedgh G, Bearak J, Singh S, Bankole A, Popinchalk A, Ganatra B, et al. Abortion incidence between 1990 and 2014: global, regional, and subregional levels and trends. Lancet [Internet]. 2016 Jul 16 [cited 2021 Feb 22];388(10041):258–67. Available from: http://www.thelancet.com/article/S0140673616303804/fulltext

Borda MR, Winfrey W, McKaig C. Return to sexual activity and modern family planning use in the extended postpartum period: an analysis of findings from seventeen countries. Afr J Reprod Health. 2010;14(4 Spec no.).

Gejo NG, Anshebo AA, Dinsa LH. Postpartum modern contraceptive use and associated factors in Hossana town. PLoS One. 2019;14(5).

Hall JA, Barrett G, Phiri T, Copas A, Malata A, Stephenson J. Prevalence and determinants of unintended pregnancy in Mchinji district, Malawi; using a conceptual hierarchy to inform the analysis. PLoS One. 2016;11(10).

Blazer C, Prata N. Postpartum family planning: current evidence on successful interventions. Open Access J Contracept [Internet]. 2016 Apr 11 [cited 2021 Feb 22];7:53. Available from: https://www.dovepress.com/postpartum-family-planning-current-evidence-on-successful-intervention-peer-reviewed-article-OAJC

Malalu PK. Determinants of Use of Modern Family Planning Methods: A Case of Baringo North District, Kenya. Sci J Public Heal. 2014;2(5).

WHO. Pregnancy, Childbirth, Postpartum and Newborn Care: A guide for essential practice Third Edition [Internet]. 2015 [cited 2021 Feb 23]. Available from: www.who.int

AT N, D G, G T. Postpartum Family Planning Utilization and Associated Factors among Women who Gave Birth in the Past 12 Months, Kebribeyah Town, Somali Region, Eastern Ethiopia. J Women's Heal Care. 2016;05(06).

Hajian-Tilaki K. Sample size estimation in epidemiologic studies. Casp J Intern Med. 2011;2(4):289–98.

Kiondo KS, Maro E, Kiwango S, Alloyce JP, Shayo BC, Mahande MJ. Prevalence and factors associated with postpartum use of long-acting reversible contraception in Bukombe District, Geita Region, Tanzania: a community- based study. Contracept Reprod Med. 2020;5(1):24.

Pasha O, Goudar SS, Patel A, Garces A, Esamai F, Chomba E, et al. Postpartum contraceptive use and unmet need for family planning in five low-income countries. Reprod Health [Internet]. 2015 Jun 8 [cited 2021 Feb 22];12(2):S11. Available from: https://reproductive-health-journal.biomedcentral.com/articles/10.1186/1742-4755-12-S2-S11

Jalang'O R, Thuita F, Barasa SO, Njoroge P. Determinants of contraceptive use among postpartum women in a county hospital in rural Kenya. BMC Public Health. 2017;17(1).

Rutaremwa G, Kabagenyi A, Wandera SO, Jhamba T, Akiror E, Nviiri HL. Predictors of modern contraceptive use during the postpartum period among women in Uganda: A population-based cross sectional study Health behavior, health promotion and society. BMC Public Health. 2015;15(1).

Abera Y, Mengesha ZB, Tessema GA. Postpartum contraceptive use in Gondar town, Northwest Ethiopia: A community-based cross-sectional study. BMC Women's Health. 2015;15(1).

Abraha TH, Teferra AS, Gelagay AA. Postpartum modern contraceptive use in northern Ethiopia: prevalence and associated factors. Epidemiol Health. 2017;39.

Ashebir W, Tadesse T. Associated Factors of Postpartum Modern Contraceptive Use in Burie District, Amhara Region, Ethiopia. J Pregnancy. 2020;2020.

Taye EB, Mekonen DG, Debele TZ. Prevalence of postpartum modern family planning utilization and associated factors among postpartum mothers in Debre Tabor town, North West Ethiopia, 2018. BMC Res Notes. 2019;12(1).