



## Prevalence and Factors Associated with Unintended Pregnancy among Women Attending Antenatal Clinic in General Hospital in Dodoma

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### Abstract

**Background:** Unintended pregnancy is a potential hazard for every sexually active woman as it poses a serious threat to the health and well-being of families globally. Information on Tanzanian women who conceive unintentionally is rarely documented. Understanding the extent of unintended pregnancy and the factors associated is crucial to devise evidence-based interventions. This study aimed to determine prevalence of and factors associated with unintended pregnancy

**Methods:** This was a hospital-based cross-sectional study. A total of 300 pregnant women were recruited through random sampling and questionnaires were pre-tested and administered. Multiple logistic regression analysis was performed using SPSS version 20 software to identify the factors associated with an unintended pregnancy.

**Results:** The overall prevalence of unintended pregnancy was found to be 73 (24.3%) and those who wanted it at a later time and not at all accounted for 143 (47.7%) and 227 (75.7%) respectively. The prevalence of unintended pregnancies decreased with the use of emergency contraceptives and being married. However, it increases in lower age 15 to 20 years 67.3% (99/147) at first pregnancy, those who have high parity 54.5% (12/22), divorced 57.1% (4/7) and not married 62.7% (37/59). The prevalence was independent of the use of modern contraceptives, the number of sexual partners, and the level of education of the mother.

**Conclusion:** Unintended pregnancy is one of the major reproductive health problems since approximately over a quarter (24.3%) of the pregnant women attending ANC had unintended pregnancy experience. There is a need to inaugurate a community-based program through increasing knowledge of family planning by designing strategic policy programs aimed at creating more sensitization on reducing the unintended pregnancy reflecting those with young age, high parity, and not married.

**Keywords:** Unintended pregnancy

**Abbreviations:** ANC: Antenatal clinic; CUHAS: Catholic University of Health and Allied Sciences; IUD: Intrauterine device; RMO: Regional medical officer; DMO: District medical officer; RCO: Regional commissioner office; SPSS: Statistical package for social sciences; LAPF: Local authorities pension fund

### Introduction

Unintended pregnancy is a pregnancy that is either mistimed (they occurred earlier than desired) or unwanted (they occurred

when no children or no more children were desired) by both parents at the time of conception [1]. An estimated 80 million unintended pregnancies occur each year worldwide, resulting in 42 million induced abortions [2]. Twenty million of these induced abortions are performed in unsafe circumstances or by untrained providers and 34 million unintended births. These unintended pregnancies have grave consequences for the health and well-being of women and their families, particularly in low and middle-income countries where maternal mortality is high and abortions often unsafe [2]. By one or another means, unintended pregnancies contribute a lot to maternal and child morbidity and mortality [3].

Unintended pregnancy is a potential threat for every sexually active woman. It is a worldwide problem that affects women, their families, society, and their nation. A complex set of social and psychological factors puts women at a risk for unintended pregnancy and, in developing countries can result in serious long-term negative health effects including infertility and maternal death [4]. Unintended pregnancies pose a major and continuing social and health challenge in Africa, accounting for more than a quarter of the 40million pregnancies that occur annually in the region. It is a key risk factor of adverse pregnancy and maternal outcomes, including mortality and morbidity associated with unsafe induced abortion [5].

In Tanzania, a few surveys conducted on issues related to unintended pregnancy suggested that women face 1- in - 24-lifetime risk of maternal mortality [6]. Whilst for some women unintended pregnancy may be welcome news, in certain situations unintended pregnancies can lead to health, social and economic problems [7]. However, for women aged 15-24 years the group at highest risk of having unintended pregnancy, the risk of maternal mortality is likely to be higher due in part to physical immaturity but compounded by their lack of knowledge and experience [8] many women experiencing unintended pregnancy in Tanzania. For example, The 2010 Tanzania Democratic and Health Survey (TDHS) estimated that 26% of births that occurred five years preceding the survey were unintended (22% were mistimed; 4% were unwanted), and these estimates showed no significant change from those observed during the 2004-05 (TDHS) [9].

Unintended pregnancies pose important public health risks and their pernicious consequences have been documented in many studies [10]. For example, existing evidence shows the presence of a relationship between unintended childbearing and several adverse health outcomes such as; maternal depression, anxiety, poor psychological wellbeing, unsafe abortion, and poor utilization of ANC or delivery care [11].

Unintended pregnancies have been attributed to poor family planning and/or inadequate access to contraceptives, religious, beliefs, inadequate understanding of contraception and reproductive health education, lack of inter-partner communication, and sexual violence [12]. Communication between partners concerning family planning is related to the use of contraceptives which in turn helps in the prevention of unintended pregnancies [13]. Font Ribera et al. (2008) report that single women, as well as those from disadvantaged socio-economic environments, are more at risk of having an unintended pregnancy [14]. Moreover, risky behaviors such as alcohol abuse and smoking may lead to unintended pregnancies [15]. Such health risk-behaviors predispose both the mother and the developing fetus to adverse pregnancy and neonatal outcomes. Based on the current knowledge of the risks related to unintended pregnancies and the scarcity of such studies

in Tanzania, this study aimed at exploring the factors associated with unintended pregnancies among Dodoma women attending the antenatal clinic in the General hospital.

## **Materials and Methods**

### **Study area and design**

The study was conducted at Makole Health Center Hospital in the Dodoma region, which is one of the health centers in the Dodoma urban district in which serves as the ANC for General hospital in the Dodoma region. It is bordered by Local Authority Pension Fund (LAPF) block to the southern-west, to the northeast by Dodoma secondary school to the north and south by Viwandani secondary school and Dar- es- salaam round about respectively. It has a total population of 11,416 people according to the 2002 and 2012 census among which males were 5,383 and females 6,033. Makole Health center serves over 21,000 pregnant women annually who are attending the antenatal clinic.

### **Data collection**

A pre-tested semi-structured questionnaire was used for the data collection on sociodemographic characteristics, awareness of family planning, and factors associated with unintended pregnancies. Questions were developed from reading similar studies and the questionnaire was piloted [16-18].

Data were collected through a cross-sectional study design conducted among the women attending the antenatal clinic, done between September and October in 2018 in Makole hospital Dodoma region. The primary purpose of this study is to generate recent and reliable information on fertility, family planning, infant and child mortality, maternal and child health, and nutrition. The sample for the study is based on random selection based on the willingness of the participants. 300 gravid women aged 15 to 49 years who provided information about the intentionality of their recent pregnancies were selected for analyses reported herein.

### **Data analysis procedure**

Data management and analysis were performed using SPSS version 20 for windows. For univariate data frequency distribution of respondents across categories of variables such as age are involved calculation and presentation of summary statistics including the percentage. Cross tabulation / bivalent analysis of pregnancy intentions by each of the independent variables was performed. The degree of association between pairs of cross-tabulated categorical variables was tested using the Pearson's chi-square ( $X^2$ ) test, significant difference was defined as P-values less than 0.01.

### **Variables and definition**

The outcome of interest analyzed in this study was pregnancy intentions and was operationalized within three categories as

intended, mistimed, and unwanted. Women responded to a survey question asking them to reflect on whether their most recent pregnancy was intended at the time of conception, intended but at a later time, or entirely unintended. Therefore a pregnancy was defined as “wanted” or “intended” if the respondent reported that she wanted to become pregnant at the time of conception. If the woman reported that she wanted the pregnancy but at a later time, her pregnancy was defined as “mistimed”. Finally, if the woman reported that she did not want to become pregnant at all, the pregnancy was defined as “unwanted”.

### Ethical approval

Ethical permission was sought from the Joint CUHAS/BMC research ethics and review committee to gain permission (no: 766/2018) to conduct the study. Permission was requested from the regional medical officer, regional commissioner officer, and district medical officer-administration of Dodoma Town. Data collection in the study was voluntary with respondents signing a written consent form before the interview. The purpose of the study was elaborated to the participants and the confidentiality of the information was kept. The data remained anonymous throughout

data analysis using codes to prevent stigma.

## Results

### Socio-demographic data

Questionnaires were given to and filled by 300 respondents, 102 (34%) were of the age group 21 to 25, 80 (26.7%) ranged from 26 to 30 years of age, 24.7% were between 31 and 40 years of age, 13.3% below 20 and only 1.3% above 40 years of age. 234 (78%) of the respondents were married, 59 (19.7%) were single and 7 (2.3%) were divorced. 206 (68.7%) respondents were Christian and 94 (31.3 %) were Muslim. Gogo seemed to be the dominant tribe constituting 37% of all respondents, Chagga 9.3 %, Rangi 6%, Sukuma 2.3 %, and all other tribes constituting 45%. 126 (42%) went up to secondary school, 119 (39.7%) participants had primary education, 37(12.3%) studied to the level of degree or above and 18(6%) didn't go to school at all. On earning a living. 177 (59%) were doing some business. 64 (21.3%) indulged in farming, 21(7%) were teachers, 1(3%) was a student and 37 (12.3%) were just housewives, data summarized in Table 1.

Aspect	Categories	Frequency(n)	Percentage (%)
Age of the Respondent	15-20	40	13.3
	21-25	102	34.0
	26-30	80	26.7
	31-40	74	24.7
	41 and above	4	1.3
	<b>Total</b>	<b>300</b>	<b>100.0</b>
Current Marital Status	Married	234	78.0
	Single	59	19.7
	Divorced	7	2.3
	<b>Total</b>	<b>300</b>	<b>100.0</b>
Religion	Christian	206	68.7
	Muslim	94	31.3
	<b>Total</b>	<b>300</b>	<b>100.0</b>

Respondent's Tribe	Gogo	111	37
	Chagga	28	9.3
	Rangi	18	6.0
	Sukuma	8	2.7
	Others	135	45.0
	<b>Total</b>	<b>300</b>	<b>100.0</b>
Highest Level of Education	primary school	119	39.7
	secondary school	126	42.0
	degree and above	37	12.3
	None	18	6.0
	<b>Total</b>	<b>300</b>	<b>100.0</b>
Occupation	Business	177	59.0
	Farming	64	21.3
	Housework	37	12.3
	Teacher	21	7.0
	Student	1	.3
	<b>Total</b>	<b>300</b>	<b>100.0</b>

**Table 1:** Socio-demographic data.

### Pregnancy intentions by maternal characteristics

Percentage distribution of pregnancy intentions by women's characteristics in the assessment of factors associated with pregnancy intentions at General hospital, Dodoma. Data are summarized in Table 2.

Variable		Pregnancy intention		P-value
		Yes	No	
Age at 1 <sup>st</sup> pregnancy	15-20	99(67.3%)	48(32.7%)	0.01
	21-25	92(84.4%)	17(15.6%)	
	26-30	30(83.3%)	6(16.7%)	
	31 and above	6(75.0%)	2(25.0%)	
Marital status	Married	186(79.5%)	48(20.5%)	0.014
	Single	37(62.7%)	22(37.3%)	
	Divorced	4(57.1%)	3(42.9%)	
Number of children	One	58(74.3%)	20(25.6%)	0.014
	Two	43(78.2%)	12(21.8%)	
	More than two	12(54.5%)	10(45.5%)	
	None	102(82.3%)	22(17.7%)	

Emergency contraceptive use	Yes No	13(56.5%) 214(77.3%)	10(43.5%) 63(22.8%)	0.073
Number of sexual partners	One Two Three More than three	168(79.6%) 211(67.7%) 25(67.5%) 13(61.95%)	43(20.4%) 10(32.3%) 12(32.4%) 8(38.0%)	0.97

**Table 2:** Pregnancy intentions by maternal characteristics.

### Percentage distribution of pregnancy intentions by women's characteristics in assessment of factors associated with pregnancy intentions at General hospital, Dodoma

In summary, the prevalence of unintended pregnancies decreased with the use of emergency contraceptives and being married. However, it increases in lower age 15 to 20 years 67.3% (99/147) at first pregnancy, those who have high parity 54.5% (12/22), divorced 57.1% (4/7) and not married 62.7% (37/59). The prevalence was independent of the use of modern contraceptives, the number of sexual partners, and the level of education of the mother.

## Discussion

### Prevalence of unintended pregnancies

Whilst several intervention studies have been conducted aiming to reduce the prevalence of unwanted pregnancies, there have been very few studies that have examined factors associated with an unwanted pregnancy, particularly in Tanzania. This study aimed to identify the number of socio-demographic and behavioral risk factors for reported unwanted pregnancy amongst all women attending the antenatal clinic in Makole Health Center Dodoma region, Tanzania. This study found that about a quarter of women (24.3%) in the study reported having unintended pregnancies. This is slightly lower than that reported in Nigeria (28%) which was higher due to low awareness and use of family planning where 44% of respondents were unaware of family planning and 22% had no access to family planning service [19]. This implies that most women are aware of family planning and know where they can access it but simply tend to ignore the use of it due to inadequate understanding of contraceptives and reproductive health education. Similarly, a study done at Addis Ababa, Ethiopia showed a higher prevalence of unwanted pregnancies where more than a quarter 126 (37.8%) of respondents reported having experienced an unwanted pregnancy at some point in their lives. Of these 50 (39.6%) were induced abortion [20]. Also, unwanted pregnancy may result in a fatal consequence if one wasn't ready to be a mother at the moment. Classification of adverse events following induced abortion includes hemorrhage and infection.

### Factors associated with unwanted pregnancies

#### 1. Marital status and unwanted pregnancies

Marital status was strongly associated with an unintended pregnancy, with single women showing a tendency toward unintended pregnancy. This study suggests that single women likely engage in sexual activities for motivations other than childbearing such as pleasure, social status, immediate gain, or other exchanges. This result was consistent with the study done in Temeke district, Dares salaam Tanzania among female youths which showed that the majority of the youths who had unwanted pregnancies were not married and most of them were still in school (47%) [21]. A study done in Ethiopia among women of reproductive age found that single women were more likely to get unwanted pregnancies as compared to their counterparts [20]. In a study done in Malawi data showed that single women were more likely to report unwanted pregnancy than married women (25% vs. 20%), however married women were more likely than single women to have experienced a mistimed pregnancy (19% vs. 12%) [22]. Surprisingly those who are divorced could have minimal chances of getting unintended pregnancy but, the study found that there are divorced women who are at risk of getting unintended pregnancy. This implies that divorced women may have some affair with one or more partners and are likely to engage in sexual activities and conceive unintendedly.

#### 2. Use of modern contraceptives and unintended pregnancies

The use of modern contraceptives was found insignificant in this study as far as unintended pregnancies was concerned. There was no difference between users and non-users regarding the prevalence of unintended pregnancies. A study done among never-married women in Bangladesh showed that women who had used a modern contraceptive method were more likely than those who had not, to classify their most recent pregnancy as unwanted or mistimed [23].

#### 3. Level of education and Unintended pregnancies

Congruent with a study done in Addis Ababa, Ethiopia among women of reproductive age [20], and in contrast to other studies the findings of this study were that the level of education

had no association with the prevalence of unintended pregnancies. For example, a study done in Kenya showed that women with at least secondary education had their first sexual intercourse delayed by at least three years [24]. Another study in Malawi among women of reproductive age showed that women with no formal education or who had not completed primary education were more likely to have had an unwanted pregnancy than women with some primary schooling. However, mistimed pregnancy was more common among women with primary schooling than among less-educated women [22].

#### **4. Age at first pregnancy and unintended pregnancies**

This study showed that the likelihood of unintended pregnancies was most likely to occur in younger-aged women 15 to 20 years (67.3%) and decreasing likelihood with increasing age. This is because most of younger women are still in school hence more likely to practice sexual intercourse for reasons other than childbearing as well as younger women have little knowledge and skills about pregnancy control mechanisms i.e. use of contraceptives as compared to the older women. This is consistent with the Papua New Guinean, Kenyan, and Tanzanian data [4-6] given that younger women have higher fertility, higher frequency of sexual intercourse, little knowledge of contraceptive methods, and higher rates of contraceptive failure relative to older women [7]. This suggests that the lesser the age at first pregnancy could be attributed to sexual violence, alcohol abuse, smoking, and early marriage. Considering the young age one may suffer serious complications during delivery due to immature reproductive organs.

#### **5. Number of children and unintended pregnancies**

This study revealed that those women with a high number of children (parity) have an increased tendency toward unintended pregnancy. This signifies that this is a lack of communication among the married couple in planning for the family, this finding was similar to the study done in Nepal [4].

#### **6. Number of sexual partners and unintended pregnancies**

This study showed no association between the number of partners and unintended pregnancies. Those with single and those with multiple sexual partners had the same likelihood of classifying their last pregnancy as unplanned. A study in Ethiopia showed that females who had more than one sexual partner were more likely to have unwanted pregnancies compared to those who had one sexual partner [20]. There was no other data found to compare the difference in the findings but they may be attributed to a single-center study.

#### **7. Use of emergency contraceptives and unintended pregnancies**

This study showed no association between the number of

partners and unintended pregnancies. Those with single and those with multiple sexual partners had the same likelihood of classifying their last pregnancy as unplanned. A study in Ethiopia showed that females who had more than one sexual partner were more likely to have unwanted pregnancies compared to those who had one sexual partner [20]. There was no other data found to compare the difference in the findings but they may be attributed to a single-center study.

### **Conclusion**

Low prevalence of modern contraception methods and high frequency of unintended pregnancies are the main features among women in Tanzania. The present study revealed that about a quarter (24.3%) of the pregnant women attending ANC in Dodoma had an unintended pregnancy experience. This indicates unintended pregnancy is one of the major reproductive health problems in the study area. The results of this study showed that several factors were interwoven to affect the occurrence of the event including use of emergency contraceptives, marital status, and low age at first pregnancy which showed significant association with an unintended pregnancy. Henceforth provision of education concerning emergency contraception and contraceptive options should be made available as part of reproductive health services.

### **Declarations**

#### **Ethics approval and consent to participate**

Ethical permission was sought from the Joint CUHAS/BMC research ethics and review committee to gain permission (no: 766/2018) to conduct the study. Permission was requested from the regional medical officer, regional commissioner officer, and district medical officer-administration of Dodoma Town. Data collection in the study was voluntary with respondents signing a written consent form before the interview. The purpose of the study was elaborated to the participants and the confidentiality of the information was kept. The data remained anonymous throughout data analysis using codes to prevent stigma.

**Competing interests:** The authors declare that they have no competing interests.

**Funding:** The study has no external funding. All operational costs were met by the authors.

**Availability of data and materials:** The datasets generated and analyzed during the current study are available from the corresponding author on reasonable request.

### **Authors' contribution**

GM, FM, NB, and JN designed the study. GM collected data. All authors drafted the manuscript, critically reviewed it, and provided final approval for publication.

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