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Unintended Pregnancy in Gaborone, Botswana: A Cross-Sectional Study

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Klara Doherty[1], Kaitlin Arena[2], Adriane Wynn[3], Ogechukwu Agatha Offorjebe[2,4], Neo Moshashane[5], Ontiretse Sickboy[1], Doreen Ramogola-Masire[1,5], Jeffrey D. Klausner[2,3] and Chelsea Morroni[1,5,6,7,8,9]*

Botswana UPenn Partnership, Unit 244G Botswana University Main Campus, Gaborone, Botswana (Postal Address PO Box AC 157 ACH)[1]; David Geffen School of Medicine at UCLA[2]; UCLA Fielding School of Public Health[3]; Charles R. Drew University of Medicine and Science[4]; University of Botswana[5]; Liverpool School of Tropical Medicine[6]; Women's Health Research Unit, School of Public Health and Family Medicine, University of Cape Town[7]; Wits Reproductive Health and HIV Institute, University of the Witwatersrand[8]; Botswana Harvard Aids Institute Partnership[9]

***For Correspondence:** Email: *kbdoherty0@gmail.com*; Phone: +267.355.4855

Abstract

Rates of unintended pregnancy in sub-Saharan Africa range from 20-40%. Unintended pregnancy leads to increased maternal and infant mortality, and higher rates of abortions. Potentially high levels of unintended pregnancy in Botswana, against the backdrop of the popularity of short-acting, less-effective contraception, could suggest that the methods available to women are not meeting their contraceptive needs. Little data exists on unintended pregnancy in Botswana. We assessed levels of unintended pregnancy and contraceptive use among 231 pregnant women presenting to the antenatal clinic at the largest hospital in Botswana. Forty-three percent of pregnancies were reported as unintended. Of women with an unintended pregnancy, 72% reported using a contraceptive method to prevent pregnancy at the time of conception. Of the women with unintended pregnancy despite contraceptive use, 88% were using male condoms as their only method of contraception. Women reporting unintended pregnancy were more likely to have had more previous births (p=0.05). While barrier protection with condoms is essential for the prevention of HIV and other STIs, condom use alone may not be meeting the contraceptive needs of women in Botswana. Increased promotion of dual-method contraceptive use with condoms is needed. *(Afr J Reprod Health 2018; 22[2]: 76-82).*

Keywords: unintended pregnancy, contraception, family planning, Africa, Botswana

Résumé

Les taux de grossesses non désirées en Afrique subsaharienne vont de 20 à 40%. Les grossesses non désirées entraînent une augmentation de la mortalité maternelle et infantile et des taux plus élevés d'avortements. Les taux potentiellement élevés de grossesses non planifiées au Botswana, dans le contexte de la popularité de la contraception à courte durée d'action et moins efficace, pourraient suggérer que les méthodes mises à la disposition des femmes ne répondent pas à leurs besoins contraceptifs. Il existe peu de données sur les grossesses non désirées au Botswana. Nous avons évalué les niveaux de grossesses non désirées et l'utilisation de contraceptifs chez 231 femmes enceintes qui se présentant à la clinique prénatale du plus grand hôpital du Botswana. Quarante-trois pour cent des grossesses ont été signalées comme non intentionnelles. Parmi les femmes ayant eu une grossesse non désirée, 72% ont déclaré avoir utilisé une méthode contraceptive pour prévenir la grossesse au moment de la conception. Parmi les femmes ayant eu une grossesse non désirée malgré l'utilisation de contraceptifs, 88% utilisaient le préservatif masculin comme seule méthode de contraception. Les femmes qui ont déclaré une grossesse non désirée étaient plus susceptibles d'avoir eu plus de naissances antérieures (p = 0,05). Bien que la protection par des préservatifs soit essentielle pour la prévention du VIH et des autres IST, l'utilisation du préservatif seul ne répond pas nécessairement aux besoins de contraception des femmes au Botswana. Une promotion accrue de l'utilisation des contraceptifs à double méthode avec des préservatifs est nécessaire. *(Afr J Reprod Health 2018; 22[2]:76-82).*

Mots-clés: grossesse non désirée, planification familiale, Afrique, Botswana

Introduction

Unintended pregnancy (which may be defined as a completely unwanted pregnancy or a poorly timed pregnancy)[1] accounts for 20-40% of pregnancies in sub-Saharan Africa[2]. Unintended pregnancies are more likely to result in adverse outcomes for mother, infant, and child, and result in higher rates of unsafe abortion[3]. In addition, unintended pregnancies hinder attempts to prevent mother-to-child-transmission (MTCT) of HIV[4] and may also exacerbate educational and economic gender inequalities[3,5,6]. Consequently, the high rates of unintended pregnancy reported in sub-Saharan Africa have consequences for women, children, and society at large.

Unintended pregnancies are preventable with effective contraception, and in Botswana the prevalence of modern contraceptive use amongst women of reproductive age has increased in the past decades; from 19% in 1984 to 51% in 2007/8[7]. This is largely due to the increase in male condom use (from 1% in 1984 to 42% in 2007/8) with only 7% of women of reproductive age in Botswana using the injectable, 6% using the oral contraceptive pill, and 1% using the intra-uterine device[7]. The sub-dermal implant was introduced to Botswana from mid-2016. While condoms are essential in the prevention of transmission of HIV and other sexually transmitted infections (STIs), they have high typical-use contraceptive failure rates[8,9]. In Botswana, the predominance of shorter-acting contraceptives that require per sexual act or daily adherence, compared to the rather negligible use of longer-acting and more effective contraceptives (e.g., intrauterine device, implants, and injectables), could contribute to high levels of unintended pregnancy. However very little data exists on unintended pregnancy rates in Botswana. We assessed the frequency of reported unintended pregnancy, determined contraceptive use/type among women with unintended pregnancies, and identified socio-demographic and reproductive factors associated with unintended pregnancy in women presenting for antenatal care in Botswana.

Methods

This was a planned secondary analysis of baseline data collected in a prospective cohort study designed to determine STI prevalence, treatment uptake, and cure rates among pregnant women receiving outpatient antenatal care at Princess Marina Hospital in Gaborone, Botswana. Princess Marina, located in Botswana's capital city, is the main government referral hospital for southern Botswana. Approximately 85% of all births in Gaborone occur there[10]. Women were eligible if they were 18 years or older and had a gestational age of less than 35 weeks. They were enrolled consecutively between July and October 2015. Participants provided demographic, behavioral, and obstetric and health history information, and answered structured questions related to pregnancy intentions and contraceptive use.

To measure intendedness of the current pregnancy, all women were asked ''When you got pregnant this time, were you trying to get pregnant?" Women who reported that they were not trying to become pregnant were also asked whether they were doing anything to prevent pregnancy, and if so, which specific contraceptive methods were used. We classified contraceptive failure or misuse (including poor adherence) when current pregnancy was reported as unintended and the participant was using a method of pregnancy prevention[8]. Unmet need for family planning was defined as a participant who reported the current pregnancy as unintended but was not using a method of pregnancy prevention[11].

Basic descriptive analyses were performed, and bivariate comparisons of pregnancy intention by other participant characteristics were conducted using STATA Version 13 (College Station, TX). The study protocol was approved by the University of Botswana Research Ethics Committee; the Botswana Ministry of Health Office of Research and Development, Health Research and Development Division; and Princess Marina Hospital Research and Ethics Committee. All women provided written informed consent prior to study participation. The

University of California, Los Angeles, approved analyses using de-identified data.

Results

During the recruitment period 270 women were eligible for participation, and 231 women (86%) were enrolled and responded to the pregnancy intention questions. The median age of the participants was 30 years (range 19-44), 23% were married, and 40% had some tertiary level of education. The median number of lifetime pregnancies (including the current pregnancy) was 2 (range 1-11), and the median number of births was 1 (range 0-7). Thirty-four percent of the participants were nulliparous and 29% had had one previous live-birth. The median gestational age of the current pregnancy was 25 weeks (range 5-35). Table 1 presents the socio-demographic, health, and reproductive characteristics of participants stratified by pregnancy intention.

Of the 231 participants, 100 (43.3%) reported their current pregnancy as unintended (Table 1), and when asked, 38% (n=36) of these women with an unintended pregnancy reported *never* wanting another pregnancy then or at any time (data not shown). Among those who reported that the current pregnancy was unintended, 72 (72%) reported using a contraceptive method to prevent pregnancy. The remaining 28 (28%) women with an unintended pregnancy reported not using a contraceptive method. Among those with unintended pregnancies, who were not using a method of contraception (n=28), the most common reason for this was that their husband/partner did not want to (n = 9). Of the 72 women who reported an unintended pregnancy despite contraceptive use, 62 (88%) were using male condoms only, 3 (4%) were using oral contraceptives, 2 (3%) were using injectable contraceptive, 1 (1%) was using an intrauterine device, and 2 (3%) were using dual methods.

Compared to women with intended pregnancies, women with unintended pregnancies were more likely to be single (p=0.04) and to have had more previous births (p=0.05). Fifty-four (24%) of participants were HIV-infected, and 35 women (15%) tested positive for one of *Chlamydia trachomatis, Neisseria gonorrhoeae,* and/or *Trichomonas vaginalis* during the study. There was no difference between levels of unintended pregnancy reported by HIV infected and HIV uninfected women, and STI test outcome was not significantly associated with pregnancy intention. Intendedness of the current pregnancy did not vary by age.

Discussion

Our study shows the high levels of reported unintended pregnancy in a cohort of women attending for antenatal care in Gaborone, Botswana. Botswana has made great progress in increasing levels of modern contraceptive use, particularly male condom use[12]. However, our data, which reveal high levels of unintended pregnancy (43%) due to a combination of both failure/misuse (72%) and unmet need (28%), suggest that women's contraceptive needs are not being adequately met in Botswana.

Our data are like the one previous study of this topic from Botswana, which found that among a sample of 941 women, 416 (44%) reported an unintended pregnancy, of which 64% reported using contraception at the time of conception[13]. The high level of unintended pregnancy despite reported contraceptive use around the time of conception (mostly condom use) suggests the need to promote more effective methods of contraception. The high typical-use failure rates due to misuse of, and non-adherence to condoms, pills, and injectables are widely reported[8, 9]. Yet these methods continue to be the most prevalent form of contraception in Southern Africa[14-16]. The high proportion of women with an unintended pregnancy who reported never wanting another pregnancy (38%) also speaks to the need for promotion of long-acting methods of contraception such as the implant and the intra-uterine device, as well as permanent methods.

In Botswana, reproductive health-care is complicated by the high rates of HIV and STIs: prevalence of HIV amongst women of reproductive age is 30.4%[17,18]. The combination of high levels of HIV and high levels of unintended pregnancy necessitates advocacy for dual-method contraception; defined as use of method(s) to prevent both unwanted pregnancies and STIs[19]. While the "Condomize" campaign to curb the country's HIV epidemic has been successful in promoting condom use[12,20], there is a need to adapt the public health message to advocate better pregnancy prevention. Literature suggests that promoting dual-method does not compromise messages about the importance of condoms[21]. Better

Table 1: Characteristics of Women in Gaborone, Botswana by Pregnancy Intention (n=231)

Categories	Total	Current pregnancy unintended n (% of total)	Current pregnancy intended n (% of total)	p-value
Total number of participants	231	100 (43)	131 (57)	
Age categories (*n*=231)				0.40
18-24 years	45	24 (53)	21 (47)	
25-29	61	23 (38)	38 (62)	
30-34	67	27 (40)	40 (60)	
≥35 years	58	26 (45)	32 (55)	
Age median (range)	30(19-45)	30 (19-45)	30 (19-44)	0.52
Relationship status (*n*=228)				0.04
Married	52	16 (31)	36 (69)	
Single	176	82 (47)	94 (53)	
Education (*n*=227)				0.35
Junior secondary or less	66	32 (48)	34 (52)	
Senior secondary	71	33 (46)	38 (54)	
Tertiary	90	34 (38)	56 (62)	
Maternal HIV serostatus at enrollment (*n*=228)				0.34
HIV-uninfected	174	71 (41)	103 (59)	
HIV-infected	54	28 (52)	26 (48)	
STI outcome (*n*=231)				0.96
Positive for *Chlamydia trachomatis, Neisseria gonorrhoeae,* and/or *Trichomonas vaginalis*	35	15 (43)	20 (57)	
Negative for *Chlamydia trachomatis, Neisseria gonorrhoeae,* and/or *Trichomonas vaginalis*	196	85 (43)	111 (57)	
Gravidity (*n*=231)				0.59
1	59	23 (39)	36 (61)	
2	61	27 (44)	34 (56)	
3	51	20 (39)	31 (61)	
≥4	60	30 (50)	30 (50)	
Median gravidity (range)	2.7 (1-11)	2.9 (1-11)	2.6 (1-7)	0.26
Parity (*n*=231)				0.05
0	79	27 (34)	52 (66)	
1	67	26 (39)	41 (61)	
2	46	23 (50)	23 (50)	
3	24	15 (63)	9 (38)	
≥4	15	9 (60)	6 (40)	
Median parity (range)	1.3 (0-7)	1.6 (0-7)	1.1 (0-5)	0.00
Doing anything to prevent pregnancy (*n*=100)				
Yes		72 (72)	-	
No		28 (28)	-	
If not doing anything to prevent pregnancy, why not? (*n*=28)				
I did not mind if I got pregnant		8 (29)	-	
I thought I could not get pregnant at that time		7 (25)	-	
Prior negative experiences of family planning (side-effects or unable to access family planning)		3 (11)	-	
Husband/partner did not want to use anything to prevent pregnancy		9 (32)	-	
Other		1 (4)	-	
Type of contraception used (*n*=70)				
Condoms		62 (88)	-	
Oral contraceptive pills		3 (4)	-	
Injectable contraception		2 (3)	-	
Intrauterine device,		1 (1)	-	
Dual method uses		2 (3)	-	

Notes: Pregnancy intention columns were derived from the responses to the question: When you got pregnant this time, were you trying to get pregnant? Percentages and ranges are in parenthesis. P-values were derived from Chi-squared tests, Fisher's exact tests, Student t-tests, or Wilcoxon-Mann-Whitney test. Percentages may not add to 100% due to rounding.

family planning has the potential to prevent MTCT of HIV[4], in a country where 680 children acquire HIV vertically every year[22]. Further, family planning has the potential to prevent unnecessary morbidity, mortality and burden on the health-system, and empower women to take control of their reproduction[23]. The latter point is especially salient when considering the significant number of women with unintended pregnancy who were not using contraception and reported partner-influence as their reason for not using contraception. The "fit and forget" features of the long-acting reversible contraceptives (the subdermal implant and intrauterine device), and to a lesser extent, the injectables, have the potential to give women control of their reproduction long-term, even if it will not necessarily address the complex social, economic, and political reasons for lack thereof.

These data also highlight some potential targets for family-planning campaigns in Gaborone, Botswana. There was an association between unintended pregnancy and women who have had more live births (p=0.05). This highlights the antenatal and post-partum period as an opportunity to offer contraception counseling and contraception methods, something advocated by the WHO[24]. The subdermal implant is safe post-partum whether a woman chooses to breast-feed or not, the intrauterine device is safe to use in the immediate post-partum period (≤48hours) or after 4 weeks post-partum, and the injectable is safe from 6 weeks post-partum[25]. In addition, there was an association between unintended pregnancy and unmarried relationship-status, compared to married women (p=0.04). Family planning must be accessible to all women, whether married or not and regardless of age, to prevent unintended pregnancies. Targeting younger, single women in an open, non-judgmental manner, could be an effective strategy to address higher rates of unintended pregnancy in this group[26-28].

Studies in sub-Saharan Africa and throughout the world report similar findings to this study, including that women with unintended pregnancies are less likely to be married or living with a partner, and more likely to have a higher number of previous births[3,13,29-32]. Interestingly, the data obtained from this study did not show an association between pregnancy intention and the extremes of age, educational status or HIV status, which is widely reported in this setting and elsewhere (*ibid*). The study sample may not have been powered to find these associations, especially as our sample had a generally high education level and an older median age, compared to other studies in this setting[13]. The study data were gathered from an antenatal sample at a single site in Gaborone, Botswana, and may therefore not be generalizable to the entire country. Although as the single site does represent 85% of births in Gaborone, our findings remain very relevant. In view of the association between unintended pregnancy and both younger age and less education reported widely elsewhere[3,13,32], it is possible that this study underestimate levels of unintended pregnancy when compared to the population as a whole. This study relied on self-reported pregnancy intention, which will be influenced by personal and cultural pressure and will evolve as the pregnancy has progressed. Women may feel pressured to over-report pregnancy intention and contraceptive use and the study may therefore have further under-estimated unintended pregnancy. Nonetheless, our results are in keeping with a previous study in the same setting, which found that among 941 pregnant and recently postpartum women, 44% of pregnancies were unintended[13].

Conclusion

This study helps illustrate the magnitude of the problem of unintended pregnancy in Botswana. It highlights that while barrier protection with condoms is essential for the prevention of transmission of HIV and other STIs, these methods are not fully meeting women's contraceptive needs. Increased promotion of dual-method contraception with condoms is urgently needed. To meet the heterogeneous contraceptive preferences of each individual women, it is vital that contraceptive choices are widened, specifically to include the longer-acting, more effective subdermal implant and intra-uterine methods. Further, the study suggests that targeting key populations with family-planning counseling, such as post-partum women, could be beneficial.

Disclosure Statement

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Contribution of Authors

C.M., J.D.K., D.R.M., A.W., and KA conceived and designed the study. A.W., K.D., K.A. O.A.O., N.M. and O.S. collected and analysed the data. All authors discussed the results, contributed to drafts of the manuscript and approved the final manuscript.

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