Factors associated with unintended pregnancy among women attending a public health facility in KwaZulu-Natal, South Africa

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Background: Across the globe a large proportion of pregnancies have been reported as unintended. There are no available reports from South Africa concerning the prevalence of unintended pregnancies. This study explored the prevalence of unintended pregnancies among South African women attending a public primary health care (PHC) clinic in KwaZulu-Natal (KZN), South Africa. It also investigated the relationship between demographic factors, contraceptive use, substance abuse and unintended pregnancy in this setting.

Methods: A descriptive cross-sectional survey was conducted among patients ($n = 328$) attending a PHC clinic. Participants were recruited by convenience sampling. Women who attended the clinic on their first antenatal visit were invited to participate. Participants filled out questionnaires in either English or isiZulu. Association between pregnancy and categorical variables was assessed.

Results: Participants were mostly single (89.9%; $n = 267$), unemployed (70.8%; $n = 222$) with a monthly income of less than R 1 500 per month (63.8%; $n = 81$). Two-thirds of the women (64.33%; $n = 211$) had unintended pregnancies. There was a significant relationship between marital status and unintended pregnancy. Women who were married or living with their partners were more likely to have planned their pregnancies as compared with those who were single or divorced. Unemployed women were more likely to have had unintended pregnancies. No other socio-demographic factors were linked to unintended pregnancy.

Conclusion: It is concluded that in this population of South African women with low education levels and low income, the prevalence of unintended pregnancies is high. These unintended pregnancies are linked to single status as well as unemployment.

Keywords: pregnancy, public sector health care, South Africa, unintended pregnancy

Introduction

Unintended pregnancies are those that are not wanted by both parents or mistimed at the time of conception.[1,2] Approximately 86 million pregnancies in 2008 were unintended, with 74 million of these occurring in less developed countries.[1] Moreover, 39% of unintended pregnancies resulted in live births, 48% in abortions and 13% in miscarriages.[1] Unintended pregnancy is a major public health burden, because it is linked with negative health, social and economic consequences.[1,3] Studies have shown that approximately 28% of unintended pregnancies in developing countries can be avoided.[4] Planned or intended pregnancies empower women to improve decision-making regarding antenatal care (ANC), prenatal diagnosis and use of folic acid, and prevent exposure to teratogenic substances, thus enhancing the health and growth of the developing child.[5]

The risk of unintended pregnancy in sub-Saharan Africa remains high and is poorly resolved due to poor access to reproductive health care.[6] In Botswana 44% of pregnancies are reported to be unintended.[7] Although recent reports indicate that the rate of unintended pregnancies in South Africa is high, these reports do not provide the frequencies of these pregnancies.[8] The 1998 South Africa demographic and health survey reported 61% and 46% unintentional first and second pregnancies, respectively, within South Africa.[9] In addition, studies conducted in KwaZulu-Natal (KZN), South Africa, suggest that 84% of all pregnancies were unintended.[10] It is important that more recent data be obtained in order to ascertain whether any changes in pregnancy intention have occurred in the last decade.

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.[11–16] Communication between partners with regard to family planning is related to the use of contraceptives and thus the prevention of unintended pregnancies.[17] This is supported by Exavery *et al.* (2014), who suggest that single marital status is a risk factor for unintended pregnancies.[18] Moreover, 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.[5] Socio-economic inequalities may therefore affect a women's ability to plan pregnancies, based on the resources available for raising a child.

Moreover, risky behaviours such as alcohol abuse and smoking may lead to unintended pregnancies.[19,20] Such health-risk behaviours predispose both the mother and the developing foetus 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 South Africa, this study aimed at exploring the factors associated

with unintended pregnancies among South African women attending a public primary health care clinic in KwaZulu-Natal (KZN), South Africa. This study is valuable as little is known about the relationship between demographic factors, contraceptive use, substance abuse and unintended pregnancy in this setting.

Methods

This was a descriptive cross-sectional survey, utilising a socio-demographic questionnaire as well as clinic records of recruited participants. The study was conducted from October 2015 to October 2016 at a primary health care (PHC) clinic in the eThekwini Municipality of KZN, South Africa. Women presenting at the clinic for the first time for ANC, between two and 30 weeks of pregnancy, were invited to participate. The average number of women that present for the first ANC visit annually is 1 800. Using this total population, a confidence level of 95% and a confidence interval of 5%, the required minimum sample size was 317.

Participants were recruited by convenience sampling. Women who came to the clinic on their first antenatal visit were informed about the study by the research nurse and were invited to participate. Participation was voluntary and no one was coerced into answering the questionnaire. Women were excluded if they were too sick to participate or suffering from mental illness. After obtaining written informed consent, a total of 328 women completed two surveys and were examined by the clinic nurse, who extracted additional data from their clinic file. The surveys were available in isiZulu or English.

A socio-demographic questionnaire, by Napier *et al.* (2009) was utilised to obtain information pertaining to the participant's

household living arrangements, family resources, employment status, income and education.[21] Obtaining socio-demographic data assists in establishing the social and economic conditions that affect an individual and can be used to establish poverty levels.[22] The researchers compiled a questionnaire to obtain information relative to contraceptive use, pregnancy and psychosocial factors relevant to pregnancy. This questionnaire was validated by a focus group, where each question was critically analysed and modified or removed if necessary. Prior to starting the study both questionnaires were pilot tested to ensure that the surveys were easy to administer and that there was no ambiguity in answering the questions.

A chart review tool was developed to extract pregnancy and health-related information from the participants' clinic charts. All data were collected on the participant's first antenatal visit. Ethical approval to conduct the study was obtained from the Institutional Research Ethics Committee of Durban University of Technology (Ref: IREC 34/14 and IREC 045/14), eThekwini Health District and KZN Provincial Department of Health (Ref: HRKM 234/14).

Statistical analysis

Statistical analysis was conducted using STATA® version 11 (StataCorp LLC, College Station, TX, USA). Data were analysed using both descriptive and inferential statistics. Frequency distributions of categorical variables, means, standard deviation and ranges of continuous variables were calculated. Association between intended pregnancy and categorical variables was assessed using the chi-square or Fisher's exact test, where applicable. For numerical data, independent Student t-tests were utilised. Multivariate regression modelling was done using a backward stepwise method with the inclusion of relevant covariates. Odds ratio were calculated for binary outcome variables. Confidence intervals (95%) were calculated and a *p*-value less than 0.05 was considered statistically significant.

Results

A total of 328 pregnant women were enrolled in the study. Their mean age was 26 ± 5.8 years, ranging from 15 to 44 years of age. Their demographic, psychosocial and pregnancy-related characteristics are highlighted in Table 1. They were mostly single (89.9%; *n* = 267), unemployed (70.8%; *n* = 222) with a monthly income of less than R1 500 per month (63.8%; *n* = 81). The mean gestational age at the time of enrolment was 13.8 ± 5.12 weeks with a range from two to 30 weeks. A third of the women (35.7%; *n* = 117) intended to continue their pregnancy yet 75.4% (*n* = 205) reported having been using contraceptives. According to the clinical records, the majority of the women were not HIV positive (69.7%; *n* = 145). Only 34.4% (*n* = 109) indicated that they had ever drunk alcohol.

Bivariate analysis showed that there was a significant relationship between marital status and unintended pregnancy, with those who were married or living with their partners more likely to have planned their pregnancy than those who were single or divorced (*p* < 0.001). Those who were currently unemployed were more likely to have had unintended pregnancies (*p* = 0.020), as seen in Table 2. No significant relationships were found between age, household income, being a recipient of a government grant or level of education and unintended pregnancy. HIV status did not affect the participants' pregnancy intention. There was a significant relationship between not using contraception by those who had unintended pregnancies and reporting that they thought they could not get pregnant (*p* < 0.001). No significant

Table 1: Participant demographics (*n* = 328)

Variables	Total *n* (%)
Age	
Under 18 yrs	18 (6.2)
18–30 yrs	220 (74.8)
> 30 yrs	56 (19.0)
Marital status	
Married/living together	53 (16.3)
Single	267 (81.9)
Divorced/separated/widowed/other	6 (1.8)
Contraception use	205 (75.4)
Ever consumed alcohol	109 (34.4)
Cigarette smoking	3 (0.95)
Recreational drug use	6 (1.94)
Currently employed	92 (29.3)
Household income	
Less than 1 500	81 (63.8)
1 501 to 3 000	28 (22.0)
> 3 000	19 (15.0)
Recipient of a government grant	70 (37.9)
Level of education	
None	9 (2.9)
Primary school	9 (2.9)
High school	228 (73.5)
Post school	64 (20.6)
HIV positive	63 (30.3)

Table 2: Demographic, psychosocial and pregnancy-related variables relative to intended and unintended pregnancy (*n* = 328)

Variables*	Intended *n* (%)	Unintended *n* (%)	*p*-value
Age			0.09
Under 18 yrs	4 (1.4)	14 (4.8)	
18–30 yrs	72 (24.5)	148 (50.3)	
> 30 yrs	26 (8.8)	30 (10.2)	
*Marital status			< 0.001
Married/living together	32 (9.8)	21 (6.4)	
Single	84 (25.8)	183 (56.1)	
Divorced/separated/widowed/other	1 (0.3)	5 (1.5)	
Contraception use	72 (26.5)	133 (48.9)	0.371
Reasons for not using contraception			
*I didn't mind if I got pregnant	63 (24.5)	28 (10.9)	< 0.001
*I thought I could not get pregnant at that time	14 (5.4)	80 (31.1)	< 0.001
I had side effects from the birth control method I was using	8 (3.1)	20 (7.8)	0.416
I had problems getting birth control when I needed it	0 (0.0)	4 (1.6)	0.301
I thought my husband/partner or I was sterile	2 (0.8)	3 (1.2)	1.000
My husband or partner didn't want to use anything	2 (0.8)	5 (1.9)	1.000
Religious beliefs	0 (0.0)	2 (0.8)	0.540
Other	8 (3.1)	30 (11.7)	0.079
Use of home remedies to stop being pregnant	0 (0.0)	1 (0.5)	0.331
*Ever consumed alcohol	31 (9.8)	78 (24.6)	0.080
Alcohol use 3 months prior to pregnancy	16 (6.3)	33 (12.9)	0.744
Alcohol consumption while pregnant	6 (2.2)	5 (1.9)	0.210
Cigarette smoking	4 (1.4)	2 (0.8)	0.668
Recreational drug use	1 (0.35)	2 (0.8)	0.283
*Currently employed	42 (13.4)	50 (15.9)	0.020
Household income			0.122
Less than 1 500	26 (20.5)	55 (43.3)	
1 501 to 3 000	10 (7.9)	18 (14.2)	
> 3 000	11 (8.7)	8 (6.3)	
Recipient of a government grant	21 (11.4)	49 (26.5)	0.271
Level of education			0.437
None	2 (0.6)	7 (2.3)	
Primary school	2 (0.6)	7 (2.3)	
High school	77 (24.8)	151 (48.7)	
Post school	27 (8.7)	37 (11.9)	
HIV positive	21 (10.1)	42 (20.2)	0.898

p-value < 0.05; there were missing data for some of the variables.

Table 3: Multivariate logistic regression of unintended pregnancy by marital status, alcohol used during pregnancy and beneficiary of a government and/or child grant

Variable	Unintended pregnancy**		
	OR	95% CI	*p*-value
Marital status			
Married	1.00		
*Single	3.73	1.82–7.62	< 0.001
Divorced	3.08	0.25–37.25	0.377
No alcohol use	1.00		
Alcohol used prior to pregnancy	0.94	0.46–1.92	0.871
Alcohol during pregnancy	0.27	0.64–1.17	0.081
No grants	1.00		
Government grants	1.24	0.62–2.47	0.549
Child grants	1.18	0.62–2.25	0.612

*Model adjusted for alcohol use before pregnancy and level of education.
**p*-value < 0.05.

relationships were found between the use of home remedies to stop pregnancy, reported history of alcohol use, use of alcohol in the three months prior to falling pregnant or alcohol use while pregnant and unintended pregnancy. There was also no relationship between cigarette smoking and illicit drug use versus unintended pregnancy (see Table 2).

Multivariate analysis, controlling for alcohol use prior to pregnancy, and level of education showed that single pregnant participants were 3.73 (1.82–7.62) times more likely to have reported that their pregnancy was unintended, with no other significant relationships being found (Table 3).

Discussion

This study ascertained factors that influence unintended pregnancy in women attending a public healthcare facility in KwaZulu-Natal, South Africa. Our results show that there is a high prevalence of unintended pregnancies in the study population, with only 36% reporting that they wanted the pregnancy. Unintended pregnancies were more common in single women and those who were not employed, with no other demographic or behavioural characteristics having an effect on pregnancy intention.

Our finding of approximately two-thirds (64.33%) of the pregnancies being unintended is consistent with reports from studies conducted in America and Ghana.[6,23] Reports from Tanzania estimate that about half of the pregnancies in that country are unintended.[18] In contrast, pregnancy intention is high in the Chinese population, where more than 72% of the pregnancies were intended.[24]

The findings from the current study demonstrate that women with unintended pregnancies were more likely to be single compared with women whose pregnancies were intended. It must be noted that the proportion of single status within the study population was high, with a total of 82% of women being single. This is consistent with findings of high single status

among women from peri-urban areas in South Africa.[25] The high rate of unwanted pregnancies among single women is corroborated by studies in both American and other African populations [6,18,26–28] Researchers have argued that single women are more likely to engage in sexual activity for reasons other than child bearing.[18] Moreover, an absence of inter-partner communication regarding pregnancy is reported to raise the risk of unintended pregnancies.[27] Furthermore, this is reported to delay prenatal care.[29] Our finding, that most of the women commenced prenatal care in the second semester, supports this. It must, however, be noted that traditional prenatal care programmes implemented in developed countries have been ineffective in developing countries, including South Africa, where prenatal care has been modified to the basic antenatal care approach, which requires women to report for their first antenatal visit prior to 20 weeks of gestation.[30]

Although bivariate analysis indicates a relationship between pregnancy intention and employment, we do not show a relationship between pregnancy intention and level of income. This is possibly due to the majority of women in the present study having a low level of income. Being single and with limited financial resources has the consequence of economic instability and thus difficulty to support a family. Furthermore, women with low income have higher rates of unintended pregnancies than those from higher income brackets and this could be related to poorer women using contraceptives infrequently and experiencing higher rates of contraceptive failure.[27] Moreover, previous reports from low-income groups within the same geographic region have shown that women have difficulty in negotiating condom use with their male partners.[31,32] Such difficulty will lead to infrequent condom use and thus the high level of unintended pregnancies.

Our data showed no correlation between intention of pregnancy and education levels, but this may be related to the majority of the women having only some form of secondary education and nothing further. In contrast, pregnancy intention was inversely correlated with education levels in other African countries.[28] Furthermore, lower levels of education are associated with increased pregnancy in single women, irrespective of the pregnancy being planned or unplanned.[26]

There was no relationship between pregnancy intention and contraceptive use. Over a third (36.6%) of the women reported that they thought they could not get pregnant. Thus, misconceptions regarding fertility and contraceptive use are prevalent. It is likely that contraceptive use was inconsistent as some women (19.5%; *n* = 64) who reported using contraceptives also provided reasons for not using them. This finding is consistent with a recent report that perceptions of low fertility lead to inconsistent contraceptive use.[33] The latter report also indicates that prior sexual intercourse without pregnancy may lead to the assumption of subfertility and hence contraceptive non-use or inconsistent use.[33]

Previous studies have also linked unwanted pregnancies with alcohol and illicit drug use as well as cigarette smoking.[23,34,35] However, this relationship was not found in the current study, possibly due to low levels of smoking (0.95%) and use of illicit drugs (1.94%) in the study population. This is consistent with other studies of South African pregnant women from the same background, which also indicated little or no substance abuse amongst these women.[36] Although over a third (34.4%) of the women had ever consumed alcohol, we found no relationship between alcohol use and pregnancy intention (*p* = 0.08).

Unintended pregnancies contribute to unwanted population growth, subsequently compromising social services. Thus, the elimination of unintended pregnancies will enhance the well-being of women and their families. We suggest a need to improve the knowledge of contraception and family planning methods within this population, so that women are able to control their fertility and determine when to have children.

We conclude that in this population of South African women with low education levels and low income, the prevalence of unintended pregnancies is high and that this is linked to single status.

Disclosure statement
No potential conflict of interest was reported by the authors.

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