INDUCED ABORTION AMONG WOMEN ATTENDING ANTENATAL CLINICS IN YAOUNDE, CAMEROON

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ABSTRACT

Objectives: Unsafe abortion is a public health concern because of its impact on maternal morbidity and mortality. The objective of this study was to document on induced abortion in Yaounde, Cameroon.

Design: Cross-sectional study.

Setting: Six antenatal clinics in Yaounde, Cameroon.

Methods: Women attending antenatal clinics between October and December 1998 were included in the study and interviewed. Nulliparous were women with no previous delivery and multiparous were defined as women who had at least one previous delivery.

Results: Out of the 1532 women, five hundred seventy-two were nulliparous and 960 were multiparous. Of the nulliparous women 17% reported a previous abortion ever; this proportion exceeded 35% in those over 24 years. For multiparous women, the proportion who reported an abortion (between the last birth and present pregnancy) was 22%. In multivariate analysis on the group of nulliparous women, older age, having used modern contraception and having spent more than two years in the city were significantly associated with induced abortion. In the multiparous group, older age, having a full time job and antenatal clinic were significantly associated with induced abortion.

Conclusions: This study shows that induced abortion is a common practice in urban Cameroon. Because of restrictive laws, a substantial proportion of these abortions are likely to be unsafe, with the risk of associated complications. There is a need for expanded comprehensive sexual and reproductive health services.

INTRODUCTION

Out of the 40-60 million abortions that are performed each year worldwide, an estimated 20 million are considered unsafe. Of these unsafe abortions 95% occur in developing countries(1). According to the World Health Organisation about 80,000 women die each year as a consequence of unsafe abortion and over 95% of these deaths occur in low income countries. The existence of restrictive and punitive laws in relation to abortion found in most sub-Saharan African countries(2,3) is associated with high rates of unsafe abortions(1). Unsafe abortions have a significant impact on maternal mortality and morbidity(4-11). Data on unsafe abortion in developing countries however are often limited and of questionable validity since women may be unwilling to admit to illegal abortion especially in acute situations. The degree of under reporting of abortion depends on the degree to which the laws are enforced and on the social and cultural attitudes towards abortion. In Cameroon, abortion is subject to legislation and is only authorised if the physical health of the woman is in danger(2,3). A baseline reproductive health survey conducted in 1996 revealed that 9% of women aged 15 to 17 years and 20% of women aged 18 to 22 years had had an abortion(12). In another study among child bearing women aged 12 to 19 years, 20% of respondents had used an abortion method and at least 14% had had at least one abortion(13). Young women in Cameroon are especially at risk of unsafe abortion and sexually transmitted infections (STIs). Girls reach maturity without knowledge about female physiology or sexuality(14). Their main source of information on STIs and contraception are the mass media and friends, which are not always reliable(15). Unwanted pregnancies which may lead to unsafe abortion, occur as a result of unprotected sex which also exposes them to STIs and HIV infection.

The objective of our study was to document about abortion in Cameroon, using data collected during antenatal care. We sought to assess the proportion of women attending antenatal care who reported a previous abortion and to identify factors associated with induced abortion. Based on the results of this study, interventions to strengthen reproductive health services in Cameroon are discussed.
MATERIALS AND METHODS

Following a population based study on HIV infection and risk factors for it in the general population of Yaounde, a study was conducted among women attending antenatal clinics (ANCs) to assess the causes and extent of bias in estimates of HIV prevalence that are based on surveillance of ANC attendees(16). There are ten major ANCs in Yaounde where onsite screening for syphilis is carried out. Out of these, six clinics that were selected were considered representative of different parts of town. All women visiting these ANC for the first time in the present pregnancy between 15th October and 22nd December 1998 were eligible for inclusion. Procedures followed routine sentinel surveillance as far as possible but with a longer interview. Women who consented to participate in the study were first interviewed about their socio-demographic characteristics and their reproductive history. Blood was taken for syphilis serology and treatment was provided if necessary. HIV testing was conducted later, anonymously. Detailed methods have been described elsewhere(17).

A total of 1532 pregnant women were included in the study of whom 572 were nulliparous (with no previous delivery) and 960 were multiparous (meaning that they had had at least one previous delivery). One of the aims of the original study was to investigate the influence of HIV on fertility, so information was collected on other factors known to influence fertility including abortion and miscarriage. In order to avoid confusion between induced and spontaneous abortion, separate questions were asked about abortion and miscarriages. Nulliparous women were asked whether they had ever had an abortion, so previous abortion for them meant any history of induced abortion, before the present pregnancy multiparous women were asked about any abortion between the last birth and the present pregnancy so in this case previous abortion meant any history of induced abortion between the last birth and the present pregnancy.

Data management and analysis: All analyses were done separately for nulliparous women and multiparous women, because of the different definitions of previous abortions as outlined above. First the proportions of nulliparous and of multiparous women who reported a history of induced abortion were calculated. A variety of factors were explored for their association with a history of induced abortion. The variables age, reported age at first sexual intercourse and age at first marriage were categorised into groups of public health significance. Factors that were found to be significantly associated with a history of induced abortion at the 5% level in analysis were entered in a logistic regression model. As appropriate, age groups and education levels were entered as dichotomous variables in the final logistic regression to alleviate the model. Duration of sexual activity was very strongly correlated with age and age at first marriage restricted the analysis to married women; therefore these two variables were not included in the final models although they were examined.

Ethical Considerations. Ethical approval for the study was obtained from the National Ethical Committee in Cameroon and the Ethical Committees of the Institute of Tropical Medicine and the London School of Hygiene and Tropical Medicine.

RESULTS

General characteristics of study population: Of the 1532 pregnant women that were enrolled in this study, 572 (37%) were nulliparous and 960 (63%) were multiparous. The general characteristics of the study population are summarised in Table 1. Nulliparous women were younger than multiparous women. The average age of the nulliparous women was 20.7 years and 84% were between 15 and 24 years. The average age of the multiparous women was 26.7 years and 67% were between 20 and 29 years. Nulliparous women had a higher level of education than multiparous women (75% secondary education or higher vs 65%) and were less often housewives (40% vs 60%). The distribution of religion and ethnic group was similar among nulliparous women and multiparous women. Of the nulliparous women 72% had lived in Yaounde for at least two years whereas this was 90% for the multiparous women. Fifty-six percent of nulliparous women and 89% of multiparous women were married. Age at first marriage and the proportion of women who had their first sexual experience before age 16 were similar in both groups of women. As could be expected multiparous women were sexually active for a longer time than nulliparous women: 85% were sexually active for five years or more vs 34% for the nulliparous women. The majority (65%) of nulliparous women had not used any contraceptive method before the current pregnancy and only 18% had used a modern method, including condoms. Among the multiparous women, 59% had not used any contraceptive method between the last birth and the current pregnancy and 25% had used a modern method, including condoms. Eighty-six percent of multiparous women had given birth to fewer than five children. Similar proportions of nulliparous women and of multiparous women reported previous miscarriage, 7.2% and 7.9% respectively. The HIV prevalence among all women was 5.6%. Multiparous women had a slightly higher HIV prevalence (5.8%) than nulliparous women (5.1%).

Nulliparous women: Seventeen percent of nulliparous women reported one or more induced abortions (Table 2). The majority of these women had one abortion but 5.3% reported two or more abortions. Of the women less than 20 years old, 9% reported a history of abortion; this proportion exceeded 35% in those over 24 years (Figure 1). In univariate analysis higher level of education, being a student and having lived in Yaounde for at least two years were statistically significantly associated with previous induced abortion. Also women who had used a contraceptive method and women who got married at a later age and had their first sexual intercourse at a later age were more likely to report previous abortion. Muslim women and women who did not attend Clinic A were less likely to report a history of abortion. In multivariate analysis only older age, longer residence in Yaounde and ever use of modern contraceptives were statistically significant factors associated with induced abortion.
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<th>Characteristic</th>
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<th>Multiparous women (N=960)</th>
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<td>D</td>
<td>41</td>
<td>7.2</td>
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<td>E</td>
<td>50</td>
<td>8.8</td>
</tr>
<tr>
<td>F</td>
<td>24</td>
<td>4.2</td>
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* Other employment includes housewives with some part time, seasonal and self-workers, retired or disabled

** Sample might be lower because of missing records
Table 2
Factors associated with previous induced abortion: Nulliparous women

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<tr>
<th>Characteristic</th>
<th>n/N</th>
<th>%</th>
<th>Crude OR (95% CI)</th>
<th>Adjusted OR* (95% CI)</th>
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<tr>
<td>Age group</td>
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<td></td>
</tr>
<tr>
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<td>24/256</td>
<td>9.4</td>
<td>1.0</td>
<td>-</td>
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<tr>
<td>20-24</td>
<td>38/224</td>
<td>17.0</td>
<td>2.0 (1.1-3.4)</td>
<td>1.0**</td>
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<td>37.5</td>
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<td>0.7 (0.3-1.4)</td>
<td>0.7 (0.3-1.7)</td>
</tr>
<tr>
<td>D</td>
<td>5/41</td>
<td>12.2</td>
<td>0.5 (0.2-1.3)</td>
<td>0.6 (0.2-1.7)</td>
</tr>
<tr>
<td>E</td>
<td>7/50</td>
<td>14.0</td>
<td>0.6 (0.2-1.3)</td>
<td>0.6 (10.2-1.5)</td>
</tr>
<tr>
<td>F</td>
<td>1/24</td>
<td>4.2</td>
<td>0.1 (0.02-1.1)</td>
<td>0.3 (0.03-2.2)</td>
</tr>
</tbody>
</table>

* After logistic regression including the variables above, except those mentioned as Non Applicable (NA); OR in bold if p value ≤ 0.05. **Reference category is age < 25 (vs age ≥ 25)
## Table 3
Factors associated with previous induced abortion: Multiparous women

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n/ N</th>
<th>%</th>
<th>Crude OR (95% CI)</th>
<th>Adjusted OR* (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous induced abortion</td>
<td>208/960</td>
<td>21.7</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>All multiparous women</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Age group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;20</td>
<td>9/53</td>
<td>17.0</td>
<td>1.0</td>
<td>-</td>
</tr>
<tr>
<td>20-24</td>
<td>48/305</td>
<td>15.7</td>
<td>0.9 (0.4-1.9)</td>
<td>-</td>
</tr>
<tr>
<td>25-29</td>
<td>59/340</td>
<td>17.4</td>
<td>1.03 (0.5-2.2)</td>
<td>1.0**</td>
</tr>
<tr>
<td>≥30</td>
<td>92/262</td>
<td>35.1</td>
<td>2.7 (1.2-5.7)</td>
<td>2.4 (1.6-3.5)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never/primary</td>
<td>56/334</td>
<td>16.8</td>
<td>1.0</td>
<td>1.0***</td>
</tr>
<tr>
<td>Secondary</td>
<td>134/566</td>
<td>23.7</td>
<td>1.5 (1.1-2.2)</td>
<td>1.3 (0.9-1.9)</td>
</tr>
<tr>
<td>Higher</td>
<td>18/60</td>
<td>30.0</td>
<td>2.1 (1.1-4.0)</td>
<td>-</td>
</tr>
<tr>
<td>Current employment of woman</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Full time</td>
<td>33/97</td>
<td>34.0</td>
<td>2.1 (1.3-3.4)</td>
<td>1.8 (1.0-3.0)</td>
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<tr>
<td>Housewife</td>
<td>112/575</td>
<td>19.5</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Student</td>
<td>9/63</td>
<td>14.3</td>
<td>0.7 (0.3-1.4)</td>
<td>0.7 (0.3-1.6)</td>
</tr>
<tr>
<td>Other</td>
<td>54/225</td>
<td>24.0</td>
<td>1.3 (0.9-1.9)</td>
<td>1.2 (0.8-1.9)</td>
</tr>
<tr>
<td>Religion</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Protestant</td>
<td>238/238</td>
<td>22.7</td>
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<tr>
<td>Catholic</td>
<td>137/601</td>
<td>22.8</td>
<td>1.0 (0.7-1.4)</td>
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<tr>
<td>Muslim Other</td>
<td>17/121</td>
<td>14.5</td>
<td>0.6 (0.3-1.0)</td>
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<tr>
<td>Ethnic group</td>
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<td></td>
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<td></td>
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<tr>
<td>Beti/Fan</td>
<td>84/303</td>
<td>27.7</td>
<td>1.8 (1.1-2.6)</td>
<td>1.4 (0.9-2.2)</td>
</tr>
<tr>
<td>Bamileke</td>
<td>74/373</td>
<td>19.8</td>
<td>1.2 (0.8-1.7)</td>
<td>1.0 (0.7-1.6)</td>
</tr>
<tr>
<td>Other</td>
<td>54/284</td>
<td>17.6</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Time spent in city</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;2 years</td>
<td>19/96</td>
<td>19.8</td>
<td>1.0</td>
<td>N/A</td>
</tr>
<tr>
<td>≥2 years</td>
<td>189/864</td>
<td>21.9</td>
<td>1.1 (0.7-1.9)</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
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<tr>
<td>Never married</td>
<td>18/65</td>
<td>27.7</td>
<td>1.5 (0.8-2.6)</td>
<td>N/A</td>
</tr>
<tr>
<td>Married</td>
<td>176/850</td>
<td>20.7</td>
<td>1.0</td>
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<tr>
<td>Past married</td>
<td>14/45</td>
<td>31.1</td>
<td>1.7 (0.9-3.2)</td>
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<tr>
<td>Contraceptive use</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>None</td>
<td>107/567</td>
<td>18.9</td>
<td>1.0</td>
<td>1.0</td>
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<tr>
<td>Modern plus condom</td>
<td>57/240</td>
<td>23.8</td>
<td>1.4 (0.9-1.9)</td>
<td>1.1 (0.8-1.6)</td>
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<tr>
<td>Other</td>
<td>44/152</td>
<td>29.0</td>
<td>1.7 (1.2-2.6)</td>
<td>1.5 (0.95-2.3)</td>
</tr>
<tr>
<td>Age at first marriage</td>
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<td></td>
<td></td>
<td></td>
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<td>&lt;17-20</td>
<td>31/166</td>
<td>18.7</td>
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<tr>
<td>17-20</td>
<td>79/431</td>
<td>18.3</td>
<td>0.9 (0.6-1.5)</td>
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<tr>
<td>&gt;20</td>
<td>77/280</td>
<td>27.5</td>
<td>1.6 (1.0-2.6)</td>
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<tr>
<td>Age at first sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>&lt;16</td>
<td>89/401</td>
<td>22.2</td>
<td>1.0</td>
<td>N/A</td>
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<tr>
<td>≥16</td>
<td>114/542</td>
<td>21.0</td>
<td>0.9 (0.7-1.3)</td>
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</tr>
<tr>
<td>Duration of sexual activity</td>
<td></td>
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<td></td>
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<tr>
<td>&lt;5 years</td>
<td>20/145</td>
<td>13.8</td>
<td>1.0</td>
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<tr>
<td>≥5 years</td>
<td>183/798</td>
<td>22.9</td>
<td>1.9 (1.1-3.1)</td>
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<tr>
<td>Previous birth</td>
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<td></td>
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<tr>
<td>≤4</td>
<td>166/823</td>
<td>20.2</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>&gt;4</td>
<td>42/137</td>
<td>30.7</td>
<td>1.7 (1.2-2.6)</td>
<td>1.1 (0.7-1.8)</td>
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<tr>
<td>Previous Miscarriage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>197/884</td>
<td>22.3</td>
<td>1.0</td>
<td>N/A</td>
</tr>
<tr>
<td>Yes</td>
<td>11/76</td>
<td>14.47</td>
<td>0.6 (0.3-1.2)</td>
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<tr>
<td>HIV Status</td>
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<td></td>
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<tr>
<td>Positive</td>
<td>12/56</td>
<td>21.4</td>
<td>1.0</td>
<td>N/A</td>
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<tr>
<td>Negative</td>
<td>196/904</td>
<td>21.7</td>
<td>1.0 (0.5-1.9)</td>
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<tr>
<td>Clinic</td>
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</tr>
<tr>
<td>A</td>
<td>120/451</td>
<td>26.6</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>B</td>
<td>47/231</td>
<td>20.3</td>
<td>10.7 (0.5-1.0)</td>
<td>0.6 (0.4-0.98)</td>
</tr>
<tr>
<td>C</td>
<td>7/94</td>
<td>7.4</td>
<td>0.2 (0.1-0.5)</td>
<td>0.3 (0.1-0.7)</td>
</tr>
<tr>
<td>D</td>
<td>7/48</td>
<td>14.6</td>
<td>0.5 (0.2-1.1)</td>
<td>0.5 (0.2-1.1)</td>
</tr>
<tr>
<td>E</td>
<td>20/68</td>
<td>29.4</td>
<td>1.1 (0.6-2.0)</td>
<td>1.1 (0.6-2.1)</td>
</tr>
<tr>
<td>F</td>
<td>7/68</td>
<td>10.3</td>
<td>0.3 (0.1-0.7)</td>
<td>0.4 (0.2-0.9)</td>
</tr>
</tbody>
</table>

* After logistic regression including the variables above except those mentioned as Non Applicable (NA). ** Reference category is age <30 (vs age ≥ 30). *** Reference category is never/primary education (vs secondary and higher).
Multiparous women reported five to eight induced abortions, which is an unlikely figure for the interval between last birth and current pregnancy. The possibility that nulliparous women might under report abortion more than multiparous women also cannot be excluded.

Data on the practice of induced abortion in the general population are scarce because women may be reluctant to report it, especially in acute situations. In a community based study in Nigeria, 21.2% of adolescents aged 17-19 reported an induced abortion (18). Previous studies on induced abortion among adolescents in Cameroon found rates of reported abortion from 9% to 20% (12,13), similar to our results. In a study in Abidjan, Cote d'Ivoire, 25.3% of all ANC women reported at least one induced abortion (19). In Kisumu (Kenya) and in Ndola (Zambia), a similar study (with the same questionnaire) among ANC attendees was conducted. In these two cities, fewer women reported one or more previous abortions: the proportions who reported abortion ranged between 3% and 9% (16). It is not clear whether induced abortion is more common in Yaounde than in the other two cities or whether women in Yaounde feel more free to talk about abortion than women in Kisumu and Ndola.

The figures on abortion which we found among women attending ANC cannot be extrapolated to the general population. The women in our study seemed to have an educational attainment level that was considerably higher than that in the general population of Yaounde (16). As induced abortion was associated with higher education level, though only marginally in the multivariate analysis, the rates found in our study are likely overestimates compared to what happens in the general population. On the other hand, women seen in the ANC are those who are planning to continue with the current pregnancy: they are likely to have higher fertility than the general population but may also be those who are less likely to choose abortion.

The factors we found to be associated with abortion in our study are similar to the ones reported in the literature (20-22). Older nulliparous and multiparous women were more likely to report a history of abortion. In nulliparous women the use of modern contraception was associated with a higher likelihood of induced abortion. The questions about the use of contraceptive methods did not specify when contraception was used, i.e. before or after abortion. So, it is possible that nulliparous women started using a modern contraceptive method after they had had an abortion. In multiparous women history of abortion was associated with the use of a traditional method of contraception. However this association was not statistically significant in multivariate analysis. The low contraceptive prevalences found in our study are similar to the ones reported in adolescents in Cameroon found rates of reported abortion from 9% to 20% (12,13), similar to our results. In a study in Abidjan, Cote d'Ivoire, 25.3% of all ANC women reported at least one induced abortion (19). In Kisumu (Kenya) and in Ndola (Zambia), a similar study (with the same questionnaire) among ANC attendees was conducted. In these two cities, fewer women reported one or more previous abortions: the proportions who reported abortion ranged between 3% and 9% (16). It is not clear whether induced abortion is more common in Yaounde than in the other two cities or whether women in Yaounde feel more free to talk about abortion than women in Kisumu and Ndola.

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The factors we found to be associated with abortion in our study are similar to the ones reported in the literature (20-22). Older nulliparous and multiparous women were more likely to report a history of abortion. In nulliparous women the use of modern contraception was associated with a higher likelihood of induced abortion. The questions about the use of contraceptive methods did not specify when contraception was used, i.e. before or after abortion. So, it is possible that nulliparous women started using a modern contraceptive method after they had had an abortion. In multiparous women history of abortion was associated with the use of a traditional method of contraception. However this association was not statistically significant in multivariate analysis. The low contraceptive prevalences found in our study are comparable to those found in previous studies in Cameroon. Despite a high level of awareness of modern contraceptive methods, 80% in women and 88% in men, the contraceptive prevalence for all women in 1998 was 24% with only 8% using a modern method,
essentially condoms (23). There are plans developed by the Cameroonian government to promote family planning and sex education with a progressive increase in the acceptability of modern contraceptive methods but programmes have not yet reached the majority of the people (23, 24). It is likely that abortion is used as a method of fertility control, especially among multiparous women. Among nulliparous women, the time spent in the city (two years or more) was associated with an increased likelihood of induced abortion. Nulliparous women are likely to have come to the city to study, to get married or to look for a job. Spending time in the city might change their way of living and increase their risk behaviour. Longer time in the city may also indicate that they are more knowledgeable about where to get an abortion.

Both nulliparous women and multiparous women were less likely to report abortion when they attended certain clinics. These clinics were affiliated with religious groups. It is unclear whether women attending these clinics have less abortions or whether they are more reluctant to admit to it as the ANC setting may have discouraged accurate disclosure of abortion histories.

In conclusion, this study shows that, in spite of restrictive laws and religious proscriptions, induced abortion is occurring frequently in this urban population in Cameroon. In this context unsafe abortions are likely to be frequent with the risk of associated complications. In order to improve sexual and reproductive health, emphasis should therefore be put on prevention and expanded sexual and reproductive health programmes, including facilities for sex education, contraception and STI prevention and care.

ACKNOWLEDGEMENTS

We are grateful to the research assistants for their time spent during the period of data collection and to the women who shared their time and experience. The study on ANC HIV surveillance, on which this work was based, was funded by UNAIDS.

REFERENCES