Sexual behaviour, contraceptive practice and reproductive health among school adolescents in rural Transkei

Geoffrey A. B. Buga, Donald H. A. Amoko, Daniel J. Ncayiyana

Objectives. To determine the patterns of sexual maturation, sexual behaviour, contraceptive practice and reproductive health among Transkeian adolescents.

Design. Cross-sectional descriptive study, using self-administered questionnaires.

Setting. Twenty-six schools in 22 rural districts of the Transkei region of the Eastern Cape.

Subjects. Standard 5, 6 and 7 pupils of both sexes.

Outcome measures. Demographic and social characteristics, maturational and sexual behavioural milestones, and the prevalence of contraceptive use, pregnancies and sexually transmitted diseases (STDs).

Results. Data from 1 072 girls and 903 boys were analysed. The mean ages (± SD) of the girls and boys were 15.29 ± 1.89 and 16.25 ± 2.05 years, respectively. Menarche and semenarche occurred at 13.90 ± 1.23 and 15.12 ± 1.58 years in girls and boys, respectively. Overall, 76% of the girls and 90.1% of the boys in this survey were already sexually experienced. The age of initiation of sexual activity was positively correlated with the age of first dating and the age of menarche and semenarche. The boys initiated sexual activity at an earlier age (13.43 v. 14.86 years, $P = 0.0000$), had sexual intercourse more regularly (61.6% v. 42.3%, $P = 0.0000$) and more frequently, and had more lifetime sexual partners (mean of 3.27 v. 1.35, $P = 0.0000$) than the girls did. Nearly twice as many sexually experienced boys as girls had a history of STD (48% v. 25%, $P = 0.0000$) and, of these, 19.1% of the boys and 6.5% of the girls had a history of genital ulcer disease. The prevalence of whether contraceptives had ever been used was only 23% among sexually experienced girls and, of these, only 19.4% used condoms. Surprisingly, 62.1% of the sexually experienced boys had used condoms, and of these nearly one-third enjoyed using them. The prevalence of adolescent schoolgirl pregnancy was 31.3%.

Conclusions: Sexual maturation occurs at an earlier age than previously among rural Transkeian adolescents. This is associated with early initiation and a high level of sexual activity, low contraceptive usage, and a high rate of adolescent pregnancy and STDs, which therefore expose adolescents to a high risk of HIV infection.

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Several reports from different parts of the world indicate that sexual maturation and initiation of sexual activity are currently occurring at a much younger age than they did in generations past.[1,2] This may not only have demographic implications because of increased fertility,[1,3-7] but may also adversely affect adolescent reproductive health as a result of exposure to various sexually transmitted diseases (STDs).[8-10] This is especially relevant today because of the unfolding spectre of AIDS.[1,10,11] Because of their risk-taking behaviours, adolescents are probably more likely to engage in unsafe sexual practices, and will therefore be more vulnerable to HIV infection, and thus AIDS.[1]

Although there is a fair amount of information about teenage pregnancies in the Transkei region of the Eastern Cape[4,13-15] and elsewhere in the country,[3,5] there is a paucity of data on adolescent sexual behaviour, contraceptive use and reproductive health. Sexual activity during adolescence may be considered a normal developmental milestone in response to biological drives, but it is markedly influenced by sociocultural norms and practices.[2] There is little information on how these biological and sociocultural factors interact to influence sexual behaviour and reproductive health in adolescents in Transkei. This study was therefore undertaken to investigate the baseline patterns of sexual maturation, sexual behaviour, contraceptive practice and reproductive health among such adolescents. This information is of crucial importance when planning interventional measures for improvement of adolescent reproductive health.

Methods

This was a cross-sectional descriptive study designed to collect information about adolescent sexual maturation, sexual activity, contraception, pregnancy and sexually transmitted diseases; self-administered questionnaires were used. Separate questionnaires were used for girls and boys. Both questionnaires were translated into Xhosa by one set of translators who spoke Xhosa as a first language, and then translated back into English by another set of translators to ensure clarity and accuracy. The questionnaires were then pretested in a pilot trial on 30 pupils each in Standards 5 - 7 at a school at Umtata that was excluded from the final study, and the necessary changes and revisions were made before final administration. Both questionnaires are available on request from the authors.

Department of Obstetrics and Gynaecology, University of Transkei, Umtata, E. Cape

Geoffrey A. B. Buga, M.B. CH.B., M.MED., PH.D.

Donald H. A. Amoko, M.B. CH.B., D.T.M.&H., M.SC., M.H.SC. (Present address: Department of Obstetrics and Gynaecology, Medical University of Southern Africa)

Daniel J. Ncayiyana, MED. DRS. ARTS (GRONINGEN), D.A.B.O.G., F.A.C.O.G.

All pupils of both sexes in Standards 5 - 7 in schools in all the rural districts of Transkei were eligible for inclusion in the study. A sample size of 2 500 adolescent pupils drawn from representative schools selected by systematic sampling from all over Transkei was thought to be more than sufficient to realise the objectives of the study, since the minimum sample size calculated for a desired alpha error of 5% with 95% confidence was only 384, assuming a 50% incidence of sexual experience, contraceptive use, adolescent pregnancy and STDs.

A list of all the senior primary and junior secondary schools in Transkei by district was obtained from the Department of Education. Since there is an average of 15 - 20 girls and boys each per standard per school, a proportionate number of schools per district was determined by systematic sampling, and the required number of schools per district was then simply selected at random for the administration of the questionnaires.

Two members of staff of health education units in each of the selected districts were trained to administer the questionnaires. Informed consent was obtained from the circuit inspectors and principals of participating schools. The questionnaires were then administered to pupils in Standards 5 - 7 on a class-wide basis under conditions similar to examinations. Two trained administrators distributed the questionnaires to the pupils. They explained the purpose of the study, how the pupils were to fill in the questionnaires, and stressed the anonymous and confidential nature of their responses. After completion of the questionnaires, the respondents put them in sealed anonymous envelopes which were then collected by the administrators. Teachers and principals were not present when the pupils were completing the questionnaires.

The questionnaires were coded and the data entered and analysed by means of Epi-Info Version 5.0. Frequency tabulations were made for categorical data, and means were calculated for continuous or ordered data. Comparisons between boys and girls were made by means of the chi-square test for categorical variables. The means of continuous variables were compared with analysis of variance for normally distributed data, and the Mann-Whitney test for data not normally distributed. Pearson linear correlation analysis was carried out to determine if there were any associations between the age at sexual maturation, first date, first coitus and first pregnancy. Not all respondents answered every item of the questionnaire. Missing responses were excluded from the analysis.

Results

A total of 2 108 black Xhosa-speaking adolescent pupils (1 072 girls and 1 036 boys) from 26 schools in 22 districts outside Umtata district filled in the questionnaires. However, the questionnaires of 133 boys were inadequately filled in and therefore only 903 were eligible for final analysis. The respondents were uniformly distributed by standard, religion and parental care as shown in Table I. The boys were significantly older than the girls ($P < 0.0001$), and smoked or drank more than the girls did ($P < 0.0001$).

Table I. Demographic characteristics of the respondents

Characteristic	Girls	Boys	*P*-value	Significance
Age	(*N* = 999)	(*N*= 853)		
Mean ± SD	15.29 ± 1.89	16.25 ± 2.05	0.0000	S
Standard	(*N* = 1 061)	(*N* = 900)		
Five	29.7%	33.0%	0.1148	NS
Six	34.2%	31.2%	0.1599	NS
Seven	36.1%	35.8%	0.8829	NS
Parental care	(*N*= 1 059)	(*N* = 885)		
Both parents	66.2%	66.6%	0.8674	NS
Mother only	24.3%	21.1%	0.1007	NS
Father only	2.3%	3.2%	0.2219	NS
Other	7.2%	9.1%	0.1113	NS
Religion	(*N* = 832)	(*N* = 757)		
Methodist	28.2%	35.5%	0.0018	S
Anglican	13.3%	18.9%	0.0025	S
Presbyterian	11.5%	12.3%	0.6459	NS
Catholic	5.0%	8.9%	0.0027	S
Apostolic	10.0%	8.7%	0.3904	NS
Other	32.0%	15.7%	0.0000	S
Social habits	(*N* = 1 016)	(*N* = 883)		
No smoking/ no alcohol	98.4%	79.0%	0.0000	S
Smoking only	0.6%	11.7%	0.0000	S
Drinking only	0.5%	3.6%	0.0000	S
Smoking/drinking	0.5%	5.7%	0.0000	S

N = total number of responses in each category from which the mean and percentages are derived; S = significant at the 5% level; NS = not significant at 5% level.

Sexual maturation and sexual behaviour

Tables II - IV show the sexual behavioural characteristics and sexual maturational milestones of the respondents. By the age of 18 years, 73.3% of girls and 87.6% of boys had already had coitus at least once. Of the 126 13-year-old girls and 67 13-year-old boys in the survey, 63.5% and 76.1%, respectively, were already sexually experienced, and 12.7% and 45.0%, respectively, were engaged in regular sexual activity. Generally, sexual experience followed shortly after the first boyfriend or girlfriend was acquired, as illustrated by the mean ages at first dating and first coitus in Table IV. There was a strongly positive correlation between the age at first coitus and the age when the respondents had their first dates ($r = 0.72$; 95% CI 0.67 - 0.77 and $r = 0.71$; 95% CI 0.66 - 0.76, respectively). The positive correlation between age at menarche or age at semenarche and the age at first coitus was, however, rather weak ($r = 0.26$; 95% CI 0.15 - 0.36 and $r = 0.21$; 95% CI 0.09 - 0.33 for girls and boys, respectively). Estimates of lifetime number of sexual partners and the frequency of sexual activity are also shown in Table II. There was no correlation between the age of menarche or semenarche and the lifetime number of sexual partners. The reasons for initiating or not initiating sexual activity identified by sexually experienced and inexperienced girls and boys, respectively, are shown in Table V.

Table II. Sexual maturation and behaviour of respondents

Behaviour	Girls	Boys	*P*-value	Significance
Sexual maturation	(*N* = 1 061)	(*N* = 893)		
Menarche/semenarche	72.2%	51.1%	0.0000	S
Sexual experience	(*N* = 1 056)	(*N* = 890)		
Experienced	75.8%	90.1%	0.0000	S
Not experienced	21.2%	9.9%		
Sexual activity	(*N* = 800)	(*N* = 802)		
Regular activity	42.3%	61.6%	0.0000	S
Irregular activity	57.7%	38.4%		
Frequency of sexual activity	(*N* = 338)	(*N* = 496)		
1 to 3 times/month	88.5%	66.1%	0.0000	S
≥ 4 times/month	11.5%	33.9%		
Lifetime No. of sexual partners	(*N* = 366)	(*N* = 506)		
1 to 2	92.6%	50.4%	0.0000	S
3 to 4	4.7%	25.1%	0.0000	S
5 or more	2.7%	24.5%	0.0000	S
Mean ± SD	1.35 ± 0.75	3.27 ± 2.38	0.0000	S

S = significant at 5% level; *N* = total number of responses in each category from which the percentages are derived.

Table III. History of contraceptive use, teenage pregnancy and STD among sexually experienced adolescents

Practice	Girls	Boys	*P*-value	Significance
Contraception	(*N*= 775)	(*N* = 726)		
Never user	76.5%	37.9%		
Ever user	23.5%	62.1%	0.0000	S
Type of contraceptive	(*N* = 182)	(*N* = 451)		
Pills	40.7%	—		
Injectable progestins	38.7%	—		
Condoms	19.4%	100%	0.0000	S
IUCD	1.2%			
Adolescent pregnancy	(*N* = 800)	(*N* = 786)		
Ever pregnant/father	31.3%	10.5%	0.0000	S
Never pregnant/father	68.7%	89.5%		
STDs	(*N* = 800)	(*N* = 802)		
Ever had STD	24.7%	48.2%	0.0000	S
Never had STD	75.3%	51.8%		

N = total number of responses in each category from which the percentages are derived; S = significant at 5% level; IUCD = intra-uterine contraceptive device.

Prevalence of contraception

Although 52.8% of the girls could identify at least one modern contraceptive from a given list, only 23.5% of 775 sexually experienced girls had ever used contraceptives. The types of contraceptive used by these few are shown in Table III. The reasons cited by 554 sexually experienced non-users were as follows: ignorance of contraceptives (33.7%); no need because no current boyfriend (23.3%); no particular reason (15.3%); fear of parents finding out (13.9%); shy of going to family planning clinic (8.3%); boyfriend does not approve (4.3%); and shy of family planning clinics and afraid of parents finding out (1.1%).

In contrast, 62.1% of the 794 sexually experienced boys had previously used condoms. Of these, 31.0% enjoyed and 56.6% did not enjoy using them.

Table IV. Mean age of respondents at selected sexuality milestones

	Girls		Boys			Signifi-
Event	Mean ± SD	No.	Mean ± SD	No.	*P*-value	cance
Menarche/ semenarche	13.90 ± 1.23	744	15.12 ± 1.58	425	0.0000	S
First date	14.41 ± 1.70	648	13.09 ± 2.44	628	0.0000	S
First coitus	14.86 ± 1.81	364	13.43 ± 2.73	386	0.0000	S
First pregnancy/ first-time father	16.51 ± 2.02	82	17.07 ± 1.76	84	0.0094	S

The figures represent the total number of responses from which the means were calculated. S = significant at 5% level.

Table V. Reasons for initiating or not initiating sexual activity, identified by respondents from a given list

Reasons	Girls	Boys	*P*-value	Significance
For initiating sex	(*N* = 759)	(*N* = 764)		
Forced by partner	28.4%	6.4%	0.0000	S
Peer pressure	20.0%	17.8%	0.2674	NS
Proof of normality	11.7%	24.2%	0.0000	S
Carried away by passion	15.2%	12.7%	0.1663	NS
Seeking physical pleasure	4.1%	15.0%	0.0000	S
Proof of love	10.1%	8.0%	0.1419	NS
Tempting media/films	9.1%	10.3%	0.4104	NS
Desire to be parent	1.4%	5.6%	0.0003	S
For not initiating sex	(*N* = 185)	(*N* = 72)		
Belief in religious values	25.4%	12.5%	0.0256	S
Fear of pregnancy	23.8%	16.6%	0.2145	NS
Wish to wait till marriage	20.0%	20.8%	0.8812	NS
Not emotionally ready	8.6%	11.1%	0.5423	NS
Fear of STDs	6.2%	4.1%	0.7012	NS
Fear of AIDS	15.7%	19.4%	0.4672	NS
Miscellaneous	1.3%	15.3%		

N = number of respondents in each category; S = significant at 5% level; NS = not significant at 5% level.

Adolescent pregnancy

At least 250 of the girls had been pregnant before, although they did not all admit this directly. This information was acquired indirectly when the respondents were asked about childcare and support. A little over 42% stated that their parents were looking after the babies; 11.2% were looking after their own babies; 17.6% reported that relatives were looking after the babies; 8.4% reported that the fathers of the babies were looking after them. Only 90 girls indicated the number of times they had been pregnant: 74.4% had been pregnant once, 15.6% had been pregnant twice, and 10% had been pregnant more than twice. Of the 81 girls who indicated the outcome of the pregnancy, 77.8% had had a normal vaginal delivery, 17.3% were delivered by caesarean section, and 4.9% had had abortions.

In contrast, 99 boys claimed to have fathered a child, although 15 of them claimed they were less than 14 years old when they first became fathers, which is possible but rather unlikely. The mean ages of the girls at first pregnancy and that of boys when they first became fathers, after excluding the aforementioned 15, are shown in Table IV. Among the girls, there was a positive correlation between the age at first coitus and the age at first pregnancy

(r = 0.68; 95% CI 0.53 - 0.79). There was also a positive correlation between the age at menarche and the age at first pregnancy (r = 0.41; 95% CI 0.20 - 0.59).

Sexually transmitted diseases

There was a fairly high incidence of a past history of STDs among sexually experienced girls and boys, as shown in Table III. Of the 198 girls with a history of STD, 5.5% had features suggestive of pelvic inflammatory disease, 19.2% had features of cervicitis, 36.6% had vulvovaginitis, 32.3% had dysuria, and 6.5% had vulval sores and lesions. In contrast, of the 387 boys with a history of STD, 14.5% had definite features of urethritis with or without other associated symptoms, a large proportion (69.5%) experienced dysuria without other symptoms, and 19.1% had penile sores with or without other associated symptoms. Inguinal adenitis was present in 8.8% of cases.

Discussion

Some of the limitations of this study include the fact that absentees and adolescents not in school were not represented in the survey. Other limitations include under-reporting or over-reporting that may have occurred as a result of the sensitive nature of some of the questions on sexuality. Some caution is therefore necessary in interpreting or drawing conclusions from some of the survey findings.[16]

Sexual maturation and sexual behaviour

The mean age at menarche among black rural adolescent girls in this study was found to be 13.90 ± 1.23 years. Although still much higher than the age at menarche recently reported for white girls in Cape Town,[17] this represents a decrease of 1.5 years in the age at menarche from that reported by Burrell *et al.*[18] in a similar population of schoolgirls in 1961. This downward trend in the age at menarche conforms with that in other parts of the world,[2] and may be attributed to better nutrition and health.[19] Semenarche in boys has not been studied as well as menarche in girls. However, in general, semenarche occurs at a mean of 13.5 - 14.5 years in industrialised countries,[2] which is 1 - 2 years later than the mean age of menarche in these countries. We have shown that semenarche occurred at a mean age of 14.9 - 15.3 years in Transkeian adolescents, which is also about a year later than the mean age at menarche of Transkeian girls. It is therefore possible that this may represent a valid estimate of the age at semenarche of Transkeian adolescents, although there are no other figures in the region to compare it with.

Three-quarters of girls and over 90% of boys in this survey were already sexually experienced. Many of these were having regular sexual intercourse. This indicates that sexual behaviour among adolescents in Transkei is characterised by early initiation and a high level of sexual activity. Sexual intercourse is, therefore, the rule rather than the exception, confirming suggestions to this effect by Ncayiyana.[20] This high level of sexual activity is by no means an isolated finding in Transkei only. Similar reports have emerged from Natal,[11] Cape Town[21,22] and other parts of the world.[1,16] This study also confirms the findings of others[2] that boys initiate sexual activity at a younger age, are more sexually experienced and active and have more sexual partners than girls do.

The reasons for early initiation of sexual activity in Transkei may be both developmental and sociocultural. This study clearly demonstrates that initiation of sexual activity was directly correlated with the age of onset of menarche or semenarche and also with the age at first dating. The interaction between boys and girls is governed by sociocultural factors. Permissiveness of society and tolerance of unsupervised steady dating interact to provide the conditions and opportunity for sexual activity.[2]

The reasons cited by adolescent girls and boys for initiating sexual activity differed somewhat. The reasons identified by boys centred around proof of normality, peer pressure and self-gratification, and are in line with findings in other reports.[2,11] By contrast, more than one-quarter of the girls experienced their first act of coitus under duress. They may not necessarily have been raped, but they were certainly forced into acceding to coitus against their will. This illustrates the position of girls in male-dominated rural Transkeian society generally: girls have little bargaining power.[20]

Contraception and adolescent pregnancy

Although the level of sexual activity is high among adolescents in Transkei, the use of contraception is not. Only 23.5% of sexually experienced girls had ever used any modern method of contraception. Of these, only 19.4% had ever used condoms. This low condom usage among adolescent girls is, however, in keeping with that of other women in Transkei,[23] and adolescent girls elsewhere in the region.[21,22] The main reasons cited by sexually experienced girls for not using contraceptives included ignorance of contraceptive methods, fear of family planning clinics and fear of parents, as well as the disapproval of boyfriends.

In contrast, nearly two-thirds of the sexually experienced boys had previously used condoms, and one-third of these enjoyed using them. This is a surprisingly high level of previous condom use, compared with the findings among urban Xhosa-speaking adolescent boys in Cape Town.[21,22]

Children are said to be so highly regarded in rural black communities that adolescents may be inclined to prove their fertility, irrespective of whether they are married or not.[11,20] In the rural setting, adolescent pregnancy is generally accepted, tolerated and even connived at by society.[20] It is therefore not surprising that nearly one-third of the girls in this survey had been pregnant at least once before, and were still happily continuing with school. In most instances, the parents of the girls were looking after the grandchildren. The age at menarche and the age at first coitus were both positively correlated with the age of the first pregnancy. This indicates that early sexual maturation and early initiation of sexual activity partly contribute to adolescent pregnancies.

Community acceptance of adolescent pregnancy is probably the reason why induced abortions are so uncommon in Transkei, and may also be partly responsible for the low-risk nature of adolescent pregnancies in Transkei in general.[13-15] Although adolescent pregnancy is well

tolerated in Transkei at the moment, the emerging demographic[14] and socio-economic aspects cannot be ignored for long, and will have to be tackled. Unplanned pregnancy does interrupt school,[4] and may even affect performance, since 11.2% of adolescent mothers were attending school as well as looking after their own babies. The difficulties of doing both well are clearly evident.

Sexually transmitted disease

Nearly one-quarter of the sexually experienced girls, and about half of the boys, had a past history of STDs. The explanation for this high prevalence of STDs may be that early initiation of sexual activity and high levels of unprotected sexual activity are known to be closely associated with increased risks of STDs.[8-10] Apart from unplanned pregnancy, this may also increase the risk of future HIV infection,[1,10,11] and cervical cancer.[10,12] This therefore implies that a large proportion of Transkeian adolescents are presently at high risk of HIV infection, since STDs do increase that risk,[24] especially in the presence of genital ulcer disease, which was present in 6.5% of girls and 19.1% of boys with a history of STDs.

What solutions can be offered to improve adolescent reproductive health? Specific policies need to be developed to address adolescent reproductive health issues through family life education. Although a number of recent reports from the USA[1,25,26] and Europe[27] have found school-based sex education to have little or no effect on adolescent sexual activity, contraception or teenage pregnancy, some other reports[28-30] indicate that such education may have beneficial effects on adolescent sexual behaviour, teenage pregnancy and contraceptive use.[27,30] In this study, we have demonstrated that early sexual maturation and starting to date early are risk factors for early initiation of coitus among Transkeian adolescents. It would therefore seem that in order to prevent such early onset of sexual activity with its attendant risks of unplanned pregnancies, STDs and AIDS, adolescents should be persuaded to delay dating, probably until they are in their late teens. Older adolescents who are already sexually active should be persuaded to use condoms in addition to other contraceptives used by the girls. This can be done through structured family life and sexuality education programmes incorporated into the school curricula, preferably before the adolescents are 13 years old. Such programmes are already working to promote sexual abstinence[31] and condom use[28] in the USA. Promotion of condom use among school-going adolescents in Transkei may be made easier by reinforcement and improvement of the existing trends we found among the boys.

Conclusions

Adolescent sexuality in rural Transkei is characterised by early initiation and a high level of sexual activity, low contraceptive usage and a high rate of adolescent pregnancies and STDs. These adolescents are therefore at high risk of HIV infection and AIDS. Family life education should be offered to adolescents before the age of 13 years so as to delay the onset of sexual activity in order to improve reproductive health.

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