Meeting the sexual and reproductive health needs of high-school students in South Africa: Experiences from rural KwaZulu-Natal

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Background. Adolescents in South Africa (SA) have a huge unmet need for sexual and reproductive health (SRH) services. Integrating such services into schools may overcome many of the current barriers to access.
Objectives. We describe an SRH service model developed for high-school students and its implementation in 14 high schools in rural SA.
Methods. Following consultation with community and other key stakeholders about the demand for and acceptability of adolescent-targeted SRH services, a three-tier school-based model was developed that included: (*i*) in-school group SRH information and awareness sessions; (*ii*) in-school individual SRH counselling and customised HIV counselling and testing (CCT); and (*iii*) referrals to in-school fixed, in-school mobile or public sector primary SRH clinics.
Results. From October 2011 to June 2012, 70 consultative meetings were held. There was overwhelming support for the pilot founded on concerns about the high HIV prevalence and teenage pregnancy rates among adolescents in the community. SRH information was provided to 8 867 high-school students, 4 171 (47.0%) of whom accessed on-site CCT services for HIV. The gender-specific prevalence of HIV in these students was 3.3% (64/1 962) and 1.1% (24/2 209) for females and males, respectively. Two hundred and thirty-nine students (5.7%) were referred for clinical services at in-school fixed, in-school mobile or public sector primary SRH clinics.
Conclusions. The SRH service provision pilot was acceptable in the community and seems feasible for scale-up. Further work is required to understand inter-school variability in uptake, identify additional service needs of students, and characterise SRH demand dynamics.

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Both globally and within South Africa (SA), the Vulindlela subdistrict in KwaZulu-Natal Province is at the epicentre of the HIV pandemic.[1,2] In the context of global decreases in HIV prevalence, high infection rates in adolescent girls are fuelling a growing epidemic in this rural community.[3] Crucially, adolescent-targeted HIV prevention interventions may represent an efficient way to improve predicted disease trajectories.[3,4]

Associations of high HIV rates with high incidences of sexually transmitted infections (STIs), high rates of unplanned teenage pregnancy and poor educational and economic outcomes are apparent in Vulindlela.[5,6] Given that age of sexual debut is considered an important covariate in these associations, adolescence is recognised as a critical period for sexual and reproductive health (SRH) beyond HIV prevention.[7,8] However, despite the obvious need for SRH facilities and a supportive legal framework,[9] adolescent-focused services are scarce[10] and young people face a number of barriers to current services.[11-13]

The purpose of this pilot study was to develop a framework for the introduction of SRH services for adolescents into schools, namely the Centre for the AIDS Programme of Research in South Africa (CAPRISA) SRH pilot (CSRHP), with the aim of improving adolescent SRH by identifying barriers to services, surveying the current state of SRH, and assessing how adolescents respond to specific forms of SRH interventions. In this paper, we describe the formative research and community consultation processes leading to the packaging, delivery, uptake and acceptability of CSHRP.

Methods

Vulindlela demographics and enrolment

The rural subdistrict of Vulindlela has limited infrastructure and few employment opportunities and is characterised by high levels of poverty. Health services are provided by seven public sector primary healthcare (PHC) clinics; the closest referral hospitals are approximately 30 km away. There are 42 high schools in the subdistrict, and on the basis of enrolment numbers and the matriculation examination pass rate in 2009, 14 schools were selected for implementation of the CSRHP. These schools had a population of 6 415 students (3 181 males, 3 234 females) in the target grades 9 - 11, with an age range of 12 - 28 years.

Community mobilisation and consultation on SRH service provision

The SRH service provision was piloted following several consultative meetings. The provincial Department of Education (DoE) and Department of Health (DoH) as well as the school governing bodies and school personnel were consulted in order to form key partnerships to review proposed implementation plans.

To determine acceptability of CSRHP, consultations were held with key stakeholders in the community. At these meetings information

on the burden of HIV/AIDS, the risk groups for HIV acquisition, the drivers of the epidemic, community needs and potential concerns were discussed. The core elements of the engagement process were to build mutual respect and community ownership of the project.

Model of SRH services and assessment

A three-tier adolescent-tailored SRH service was piloted incrementally from October 2011 to June 2012 (Table 1). The uptake of SRH services was recorded and referrals to PHC clinics tracked to assess demand for CSRHP provisions and linkage of care. At the point of departure from customised HIV counselling and testing (CCT), those students tested for HIV were asked to give a reason for testing to assess risk behaviour.

Data analysis

Differences in HIV prevalence between female and male students were explored by χ^2 tests, and where appropriate odds ratios were calculated. These analyses were performed using LaMorte's epidemiology/biostatistics tool.[14]

Results

Between October and December 2011, 14 consultative meetings were held between CAPRISA and the provincial DoH (*n*=3), the provincial DoH (*n*=2) and PHC managers (*n*=9) on the roles and responsibilities in the proposed plans for CSRHP. A further 56 consultative meetings with a broad range of stakeholders were held, including the traditional council of the six school wards (*n*=6), the traditional council health committee (*n*=1), student representative council and school governing bodies (*n*=12), principals and educators (*n*=14), school research support groups (*n*=14), and the CAPRISA research support group (*n*=1). Targeted group meetings were held with female (*n*=8) and male (*n*=4) students.

Students self-identified major barriers to current SRH services as discomfort in communication with adults, lack of adolescent-specific services, cost implications of travel to clinics, incompatibility of school and clinic opening hours, and concerns about confidentiality, specifically with regard to personal connections to clinic staff. The community was concerned about the high rates of intergenerational relationships, teenage pregnancy and HIV in adolescents, and were supportive of improving access to contraception and provision of STI treatment.

A total of 8 867 students across the 14 schools were exposed to at least two sessions of the tier 1 in-school group SRH information and awareness sessions over a 6-month period from January 2012.

There was a steady increase in the uptake of tier 2 in-school individual SRH counselling and CCT throughout the pilot, with a total of 2 795 students (44.0%) attending these sessions, of whom 1 450 (52.0%) were female and 1 345 (48.0%) male; however, there was considerable variability between schools, with uptake ranging from 19% to 96%.

The main reasons for engagement with HIV CCT were self-reported as engaging in unprotected sex, concerns surrounding caring for HIV-positive household members, and experience of some form of sexual abuse. In the former case, unprotected sex was typically self-reported to be initiated for one of three reasons: (*i*) the perception that medical male circumcision confers complete protection against HIV infection; (*ii*) unplanned sex; and (*iii*) refusal to use barrier contraceptives. Seventy-one students (2.5%) tested HIV-positive and were referred from tier 2 services for clinical tier 3 services; of these 59 (83.1%) were female and 12 (16.9%) male (Table 2). Overall, female students were at 4.6-fold higher risk than male students of being HIV-positive ($p<0.001$). The greatest differences between male and female student HIV prevalence were observed in the youngest age group of <15 years ($p<0.001$), with relatively less significant differences between females and male students with increasing age thereafter.

Two hundred and thirty-nine students (5.7%), of whom 214 (89.5%) were female and 25 (10.5%) male, were referred to clinical tier 3 SRH services for reasons other than positive HIV serostatus. Of the students referred, 97 (40.6%) were treated for STIs, of whom 76 (78.4%) were female and 21 (21.6%) male; 9 (3.8%) were diagnosed with symptoms of pulmonary tuberculosis and referred to the local PHC clinic; 100 (41.8%) were counselled and initiated on contraception; and 33 (13.8%) tested positive for a pregnancy and were referred for antenatal care. Gender disparity in reasons for tier 2 to tier 3 referral is shown in Fig. 1. None of the students requested emergency contraception. All students attending the tier 2 services were provided with male and/or female condoms.

Table 1. CSRHP service provisions

Tier 1: In-school group SRH information and awareness sessions

Nurse-driven, short in-school group sessions providing general information on HIV, STIs, CCT, sexuality, wellness, availability of the SRH services and referral procedures were held once a quarter. Leaflets promoting the availability of the SRH service and the number of a dedicated information helpline were distributed at the schools.

Tier 2: In-school individual SRH counselling and CCT

Individual counselling services were provided 6-monthly in partnership with a local NGO and were delivered between 12h00 and 16h00, giving opportunities to attend both in and out of school hours. The counsellors were trained in adolescent engagement and CCT, which expands on standard HIV counselling to include collaborative discussions on relationships, negotiating sex, assertive behaviour and high-risk sexual practices.

Tier 3: Referrals to in-school fixed, in-school mobile or public sector primary SRH clinics

Students could access SRH services following referrals from the CCT sessions or could self-refer. Referrals were made either to an in-school fixed or mobile SRH service or to a local public sector primary healthcare clinic. In-school services were professional nurse driven and typically equipped for: screening and treatment of common STIs; male and female condom provision; counselling, including CCT; contraception, including emergency contraception; pregnancy testing; screening for pregnancies; and providing referrals and information on issues requiring further management, including safe termination of pregnancy and HIV treatment. Students were seen individually from 12h00 to 16h00 and services were rotated across the 14 schools.

CSRHP = Centre for the AIDS Programme of Research in South Africa sexual and reproductive health pilot; SRH = sexual and reproductive health; STIs = sexually transmitted infections; CCT = customised counselling and testing; NGO = non-governmental organisation.

Table 2. Age- and gender-specific HIV prevalence in students accessing HIV CCT

Age group (years)	Total *n*/*N* (%)	Females *n*/*N* (%)	Males *n*/*N* (%)	OR	95% CI	*p*-value
≤15	26/1 367 (1.9)	23/701 (3.2)	3/666 (0.4)	7.28	2.18 - 24.37	<0.001
16 - 17	22/816 (2.6)	17/439 (3.8)	5/377 (1.3)	2.92	1.07 - 7.99	0.029
18 - 19	16/432 (3.7)	12/214 (5.6)	4/218 (1.8)	3.06	0.97 - 9.62	0.046
≥20	7/180 (3.8)	7/96 (7.2)	0/84 (0.0)	N/A	N/A	0.015
Total	71/2 795 (2.5)	59/1 450 (4.0)	12/1 345 (0.8)	4.56	2.46 - 8.45	<0.001

CCT = customised HIV counselling and testing; OR = odds ratio; CI = confidence interval.

The uptake of referrals to tier 3 services was tracked (data not shown). Uptake varied considerably by service point type (in-school fixed, in-school mobile or public sector primary SRH clinics). Critically, <10% of students referred to non-school-based and non-adolescent-targeted PHC clinics were registered as attending their referral appointments.

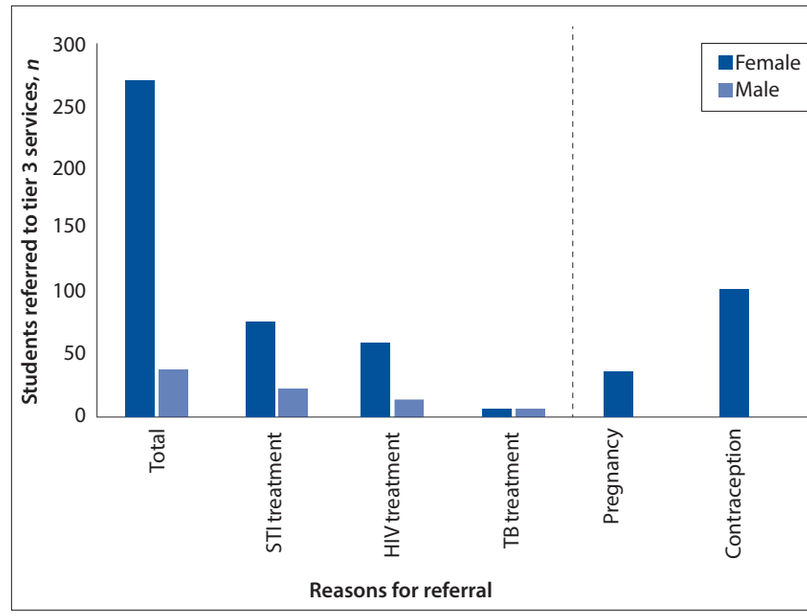

Fig. 1. Gender disparity in referrals from tier 2 to tier 3 services. (STI = sexually transmitted infection; TB = tuberculosis.)

Discussion

Community consultations were critical in the development of the CSRHP, not only for the formation of local partnerships central to its implementation and in the assessment of barriers to current services, but also in acknowledging that broader community factors beyond the individual are essential targets in any behaviour change intervention.

HIV, pregnancy and STI prevalence rates among students accessing CSRHP services confirmed previous reports that the majority of adolescents in this district are sexually active and reflected community concerns regarding their requirement for tailored services.[5] The incidence rates observed in the pilot clarified the SRH needs of adolescents in the community and will help to guide future policy decisions. Particularly striking is the disparity of HIV infection and STI rates between the genders, highlighting the urgent need for female-targeted interventions. Further, self-reported motivations for HIV testing included several misconceptions that highlight the continued need for SRH education in schools.

One of the central aims of the CSRHP was to evaluate how best to implement evidence-based prevention interventions, such as CCT counselling. The pilot demonstrated that brief in-class information sessions facilitated student uptake of individual SRH and CCT counselling and that it was feasible to provide CCT in schools. The fact that <10% of referrals from adolescent-tailored PHC clinics were fulfilled highlights the greater acceptability of the programme to students who are otherwise unwilling to attend primary healthcare clinics. However, these data also suggest that linkage of care needs to be strengthened in order to offer complete coverage for SRH needs.

There was considerable variation in the uptake of services at individual levels between schools, and delineating the causes of such school-level variation will no doubt be critical in optimising future implementation strategies. In some schools, limited infrastructure was a barrier to service provision, particularly in the case of maintaining confidentiality for HIV-positive students. For this, ease of access, and probably multiple other complex reasons, in general the in-school mobile services were preferred, although it was noted that different students favoured different service points. These data highlight the need for variety in SRH service provision; assessing user patterns of access to care is critical in determining the correct balance of services. Further work is needed to identify the frequency of SRH service provision and demand creation necessary to ensure sustainability of any successes. Moreover, the CSRHP indicates that while school-based SRH service provision is desperately required and in principle feasible, considerable evidence-based work remains to maximise the benefits of any investments.

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