AIDS prevention through peer education

A key element in the response of industry and commerce to the HIV/AIDS epidemic has been workplace-based HIV/AIDS peer-education programmes (PEPs). A number of such programmes have been in operation over the past decade. However, we have not been able to locate any published evaluations of these programmes. In this context, the report by Sloan and Myers[1] in this issue of the *Journal* is of particular importance. This report concludes that the workplace PEP studied was not effective. This raises questions about the role of PEPs in a more comprehensive HIV/AIDS programme with regard to effectiveness and cost. These results may be pertinent to other PEPs, for example the school-based programme that will be rolled out in the Western Cape in 2005. The Provincial Government of the Western Cape is in the process of rolling out a comprehensive programme which, on the back of successes with earlier programme aspects such as MTCT and ART, now includes a significant preventive element – PEP in schools.

Although the Western Cape has had a curriculum-based awareness and lifeskills programme (operational in about 70% of schools currently) for the last 4 years, it is likely that HIV prevalence among 15 - 19-year-olds is still rising.[2] With a view to stepping up prevention among school-going youth in this age group, the Department of Education has contracted 12 locally based NGOs with experience in the field to implement a PEP in all schools. The programme has already commenced and will be introduced in all schools during the course of 2005. Its aims are to delay sexual debut, decrease the number of partners, increase condom use, encourage abstinence and encourage early sexual health help-seeking behaviour. It is funded from the Global Fund Grant awarded earlier this year to the Western Cape Department of Health.

In light of the negative findings from the study by Sloan and Myers,[1] it is reasonable to speculate on whether the proposed peer education-based programme to be rolled out in schools in the Western Cape is likely to be effective. Reviews of school-based AIDS prevention programmes in sub-Saharan Africa[3-6] have concluded that the quality of the evaluations is generally low, which makes it difficult to draw confident conclusions on the efficacy of the programmes. Notwithstanding, there is some evidence that the better-designed evaluations demonstrated programme effects. Specifically, the interventions revealed the expected effects on knowledge, attitudes and communication on sexuality.[5] Some programmes also had an effect on behaviour. Evidence from the developed world is derived from intervention methodologies that are generally of higher methodological quality. There is consensus that school-based interventions can be effective in reducing the extent of unsafe sexual behaviours as manifest by condom use, sexual frequency outcomes, communication with sexual partners, and objectively measured condom use and negotiation skills.[7-14]

Given that there is evidence that school-based AIDS prevention programmes can be effective, the next issue is whether school-based programmes based primarily on peer education have been shown to be effective. One of the ways in which peer interventions are hypothesised to influence adolescent health behaviours is by influencing social norms. A large amount of research reveals the strong and consistent influence of social norms on adolescent sexual behaviour.[13] Kirby[12] proposed that a simple conceptual framework of social norms, and connectedness to those expressing the norms, can be used to explain some effects of the disparate adolescent sexual risk reduction interventions. Specifically, if a group has clear norms for (or against) sex or contraceptive use, then adolescents associated with this group will be more (or less) likely to have sex and use contraceptives. The impact of the group's norms will be greater if the adolescents are closely connected to this group than if they are not. This conceptual framework is supported by several theories of health behaviour and a large body of research. Kirby[13] recommends giving greater consideration to norms, connectedness and their interaction in research and in the development of programmes to reduce adolescent sexual risk-taking. This can be achieved by designing and evaluating programmes that increase the connectedness between youth and other youth or adults who express clear, responsible norms. It can also be done by mobilising friends and 'opinion leaders' to take a positive public stance on sexual risk taking. Opinion leaders are visible, popular and well-liked members of selected (pro- and anti-) social networks, strategically selected for popularity, community respect and influence. They influence social norms among their peers through informal social contacts. This is in contrast to 'traditional' peer educators who are often volunteers or chosen by teachers or health workers. There is no guarantee that 'traditional' peer educators will possess the characteristics of opinion leaders or that they will be influential in their social networks. Opinion-leader interventions are based on the diffusion-of-innovations theoretical model.[15]

'Popular opinion leader' intervention has been shown to be effective at reducing sexual risk behaviour among adults in the USA. A seminal series of studies conducted by Kelly and colleagues,[16] culminating in a randomised controlled trial

among adult gay bar patrons in eight small American cities, demonstrated that reliably selected popular opinion leaders, trained to promote risk reduction to their peers, were effective in achieving community-wide reductions in self-reported sexual risk behaviour.

Studies focusing on changing social norms through the use of opinion leaders have been successful in a wide variety of health interventions. These include designated driver programmes,[17] interventions to improve the professional practice of health workers,[18-26] and smoking cessation efforts.[27,28] Besides the paper by Sloan and Myers in this issue of the *Journal*,[1] two previous South African studies have involved opinion leader interventions. First, Ward and Flisher[29] investigated whether mental health effects of work in a forensic mortuary could be mitigated. Opinion leaders, chosen from among mortuary workers, were trained in traumatic stress management methods and asked to disseminate these skills to their co-workers. While opinion leaders made gains in impact of event scores, leisure repertoire, problem-solving, and positive states of mind, no mortuary-wide gains were observed in either mortuary. Second, Mathews *et al*.[30] investigated the feasibility of identifying student opinion leaders in two high schools in Cape Town, and whether these opinion leaders would be willing to be involved in AIDS prevention programmes at their schools. The results of the project answered both of these questions in the affirmative.

In conclusion, the research base provides grounds to believe that the proposed peer education intervention to be rolled out in Western Cape schools in 2005 may be effective. Furthermore, it may be more likely to be effective if an opinion-leader approach is followed, as opposed to a more traditional peer-education approach. However, another key determinant of success or failure is the social and cultural context of the schools. If the school is dysfunctional and the school climate (defined as the sum and quality of the relationships of all members of the school community) is negative, it is unlikely that peer intervention will be effective.[31] South Africa's first major attempt to reduce HIV at a community level used participatory peer-education approaches among school students, sex workers and miners. The evaluation found that the student-peer education initiatives were undermined by a school climate characterised by an authoritarian approach to student-teacher relationships and gender inequalities.[32] An important consideration for South Africa is the extent to which PEPs will be embedded in broader school development programmes to improve school functioning and school climate, as opposed to functioning as a discrete programme.

The Western Cape schools-based PEP will run alongside related initiatives (curriculum-based lifeskills, adolescent-friendly clinic initiative and numerous local NGO youth projects). Co-ordination, however, appears to be lacking. The appearance of notions of building 'social and human capital' in the provincial government lexicon pinpoints the important advance in the thinking within government when tackling complex social ills such as the spread of HIV infection. Simply put, strengthening the fabric of the school environment constitutes an essential prerequisite for reducing adolescent sexual risk taking in a context of multiple exposures feeding the spread of HIV, including substance and alcohol abuse, gender inequality, gangsterism, teenage pregnancy and sexual abuse. It would be a considerable achievement for the Department of Education to contribute to the understanding and implementation of effective peer-educational interventions in complex settings.

It is essential that the proposed PEP is subject to a methodologically seamless evaluation. For example, there should be sufficient statistical power to detect effects and there should be random allocation of schools to receive the intervention or not. The follow-up should be done after at least some weeks have passed subsequent to the intervention. The results of the evaluation should be published in the peer-review literature, as opposed to remaining in the form of an unpublished report without the benefit of critical review by experts. In addition, the evaluation should be comprehensive, and address at least the following three aspects: (*i*) input (the total resources required for the intervention); (*ii*) process (the quality of the implementation of the intervention); and (*iii*) outcome (the effectiveness of the intervention). It is necessary to examine the outcome in terms of actual behaviour, as opposed to intended behaviour.[3] For those who are not yet sexually active, this can include delay in first intercourse. For those who are sexually active, this can include behaviours such as a decrease in the number of partners or an increase in the rate of condom use. In assessing the outcome, it is important to answer the question of *why* the intervention was effective as this will inform the ongoing development and refinement of the proposed peer-education intervention, and also of course inform new interventions. In answering this question it is crucial to include the social and cultural context of the schools, for example school climate.

Finally, cost-effectiveness can also be addressed. This involves assessing the outcomes in relation to the inputs. It enables questions to be answered, such as 'How much money is required for each episode of condom use that can be attributed to the intervention?'. At a broader level, it is essential to provide sufficient funding for the evaluation of the

intervention. Failure to do so can result in a useless or even harmful intervention being offered to large numbers of adolescents. Clearly this would not be cost effective, either financially or in terms of opportunity.

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