

Peer sexual health education: Interventions for effective programme evaluation

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Abstract

Peer education is used as a health promotion strategy in a number of areas, including sexual health. Although peer education programmes have been around for some time, published systematic evaluations of youth sexual health peer education programmes are rare. This article discusses the advantages and disadvantages of youth sexual health peer education programmes, the importance of programme evaluation, and strategies for developing effective programme evaluation tools. The value of conducting both process (programme delivery) and outcome (programme impact) evaluation is examined as well as methods for conducting these forms of assessment. Considering the wide range of peer education programmes and the diversity of communities served, the article concludes that the creation of a single evaluation method may be an impossible task. To address this challenge, principles for effective programme evaluation are proposed with tools that can be tailored to the unique goals of specific sexual health organizations.

Keywords

peer education, programme evaluation, sexual health, youth

Introduction

This paper discusses the advantages and disadvantages of youth sexual health peer education programmes, the importance of programme evaluation, and strategies for developing effective programme evaluation tools. Although peer education programmes have been around for some time, published systematic evaluations for youth sexual health peer education programmes are rare^{1–9}. Broadly defined, peer education occurs when individuals of a specific self-identified group educate other individuals from that same self-identified group with whom they may share similar social

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June Larkin, University of Toronto, New College, 40 Willcocks St., Toronto, Ontario, Canada M5S 1C6. Email: june.larkin@utoronto.ca backgrounds or life experiences¹⁰. Peer education has been used in a number of health-related areas including: drug education, tobacco and alcohol abuse prevention, nutrition promotion and sexual health education^{11,12}.

Peer education, as applied to youth sexual health, 'is the teaching or sharing of health information, values and behaviours by members of similar age or status groups'¹⁰. Youth sexual health peer education programmes cover a number of topics such as the risk of sexually transmitted infections (STIs) including the Human Immunodeficiency Virus (HIV); safer sex practices and the use of condoms; birth control; violence and healthy relationships, often within an anti-oppression framework. Peer educators also address misconceptions, prejudices, attitudes and stigmas surrounding sexual health issues^{3,13–15}. The aim of many peer education programmes is to help youth make informed decisions while providing them with support and accurate information. While rigorous evaluations are rare, peer education has proven to be effective in a number of different settings, including sexual health^{7,16,17}.

This paper was developed as part of a larger study on the evaluation needs and practices of peer sexual health education programmes. A secondary goal was to build youth capacity in communitybased research. To this end, senior high school youth were hired and trained to conduct the project literature reviews. The training process was coordinated by a graduate student and included: doing background reading in the literature review topic; attending workshops on research techniques and library search strategies; visiting community organizations that offer sexual health services; and learning to do a critical analysis of the literature collected. This paper is one product of that process and was used to inform our interviews on evaluation needs and strategies with peer sexual health educators and supervisors.

Peer education formats

In Canada, youth peer education in sexual health operates in a number of different formats. One popular form is a Speakers' Bureau which includes trained speakers who educate community and organization members, train and recruit new volunteers and motivate others to take action. Components of an effective Speakers' Bureau include research, strategic market promotion, content development, coaching, promotion, monitoring, and evaluation¹⁸. The YouthCo AIDS Society, an HIV and Hepatitis C peer education group in Vancouver, is one example. Speakers' Bureau volunteers facilitate dialogue among youth on HIV and AIDS, safer sex, substance use and risk reduction, and build capacity among youth to educate and support each other¹⁹. The Toronto People with AIDS Foundation (Toronto PWA) has a Speakers' Bureau that includes adult and youth speakers with the goals of dispelling myths and misconceptions about HIV and AIDS and reducing stigma and discrimination by giving HIV/AIDS a human face²⁰.

Telephone support lines are another popular form of peer education. Almost all Canadian health organizations are accessible by telephone and some have telephone lines that adolescents can call for sexual health information. Planned Parenthood Toronto's Teen Sex InfoLine (TSI) uses trained peer volunteers to offer phone information, support and referrals to youth²¹. The Lesbian, Gay and Trans Youthline serves youth across Ontario providing peer counselling and safe sex information. Telephone support lines are a practical way for Canadian youth to get support and information from peers and referrals to sexual health services. The increased accessibility of mobile phones has allowed for easier and more convenient access to telephone help services for youth in Canada, and new programmes using text messages are being piloted as a strategy for peer support.

Adolescents can also use the internet for easy, anonymous access to youth sexual health information²². The internet is becoming a major avenue for peer education^{23–25} and many sites offer

3

sexual health information targeted specifically to young people. Examples include: sexualityandu.ca, thebody.com and livepositive.ca. Planned Parenthood Toronto uses MSN Messenger as part of its peer education programming on their website spiderbytes.ca²⁶. The internet is a globally available network, allowing coordination of effective peer education programmes from a centralized location without incurring travel costs to reach diverse geographic regions²⁷.

Peer education has also become popular through the artistic realm of theatre. The Gendering AIDS Adolescent Prevention (GAAP) Project, has worked with Aboriginal youth to turn data on HIV and AIDS research into performances for HIV awareness, prevention and education. The performances have been produced as a DVD that highlights the connections between HIV vulnerability and the social issues facing Aboriginal youth in urban areas and on reserve settings²⁸. YouthCo, hosts a Forum Theatre Troupe consisting of theatre games and discussing issues like sex, sexualities, drug use and self-esteem¹⁹. Forum theatre works by encouraging the audience to interject and share opinions and thoughts about what should happen next in the scene²⁹. YouthCo uses peer youth facilitators to act out scenes, and encourages participants to intervene and participate.

Harm reduction, both a format and a methodology for peer education, is based on fundamental principles that respect individual decisions and strive to reduce harm without judging those engaged in risky behaviour³⁰. The rationale behind these programmes is that people who use drugs may still engage in drug use, but if they use drugs in a safer manner, then the associated risks can be lowered³¹. Many harm reduction programmes recognize abstinence as an option for drug users but also promote a variety of alternative options that reduce harm. The TRIP! Project focuses on serving youth in the electronic dance music community³². TRIP! sends trained peers to raves and clubs to hand out condoms, lube, and youth friendly fliers on safer sex and drug use. Their brightly coloured fliers use youth-friendly language like 'sucking' and 'fucking' and display attention-grabbing images. All materials are produced by volunteers and active users, and are 'fact checked' for accuracy.

In general, peer education can constitute anything from something as simple as informal conversations with young people at a club about risky health behaviour, to formal referrals to service providers³³. Other methods include benefit concerts, school assemblies, workshops, posters, message boards, newsletters, stickers, buttons, theatre, art, song contests, essay contests and distribution of articles and pamphlets³⁴. The range of methods through which peer educators try to reach their audience is extensive and constantly expanding.

Advantages of peer education

Peer education has a number of advantages over other sexual health education efforts. First, peer educators are believed to be credible sources of information^{33,35,36}. Peer educators are often individuals who have experienced trials and tribulations similar to the youth they are trying to reach and may also have similar hobbies, tastes in music, pop culture references, use of language (including slang) and family issues³³. Information provided by authority figures such as teachers, government employees and police officers can be received by youth with mistrust or be seen as preaching³⁶. Peer education gives youth the opportunity to learn about sexual health and to ask questions from their peers who they see as being more likely to understand their situation¹³.

Peer education programmes are also beneficial to the peer educators themselves^{37–41}. Peer leaders are usually given special training which contributes to personal development and job skills^{35,42}. Peer educators learn transferable skills including communication, organization and teamwork through both experience and training⁴³. Although most peer educators are volunteers, they are often asked to commit to engagements and keep records of interactions they have with youth. This accountability allows for the development of advanced organizational skills⁴⁴. Peer educators also gain valuable information about sexuality and may be more likely to use condoms and seek health services³⁵. Finally, peer leaders can gain a sense of responsibility as well as recognition from their communities, particularly when they are given the opportunity to have input into programme design and operation⁴². Overall, many peer educators benefit from peer education programmes because they gain an increased knowledge of sexual health, learn valuable skills, entertain more positive opinions and attitudes about sexual health matters and report a decreased frequency of high-risk behaviour^{7,17,45–48}. The knowledge, confidence and opportunities gained by peer educators can lead to increased job opportunities and greater eligibility for admission to university and college.

Disadvantages of peer education

Peer education is not without criticism, however. Peer educators do not possess the same academic knowledge or professional experience as health educators. Furthermore, peer educators sometimes receive inadequate training, limiting their ability to educate their peers effectively⁴⁹. There can also be stigma held against peer educators who have faced adversities in their own lives, particularly by mainstream health service organizations and professionals. Some studies question the validity of the assumption that peer education influences behaviour. A review of the literature on peer influence and smoking behaviour concluded that there was inadequate evidence to assert that peers could affect behavioural change⁵⁰. For example, a South African study found that youth continued to practice unsafe sex despite having gained knowledge about HIV and AIDS prevention through peer education⁵¹.

Power issues are another concern, as gender inequities and other forms of discrimination can be reinforced if anti-oppression education is not built into peer education training⁵². Another challenge is the lack of consensus on the definition of 'peer'⁵³. Some groups define youth as individuals aged 15–24⁵⁴ which is a very wide age span. Overall, the diversity of organizations offering an even more diverse range of peer education programmes makes it difficult to evaluate and compare peer education programmes. Furthermore, critics have claimed that there is limited evidence that peer education programme developers fully understand the intricacies of peer influence and, therefore, may not have the theoretical knowledge to develop effective intervention programmes^{55,56}.

Evaluating peer education

Typically, the evaluation of youth sexual health peer education programmes takes two major forms: process evaluation and outcome evaluation. Process evaluations often use qualitative methodology to examine programme delivery, implementation and acceptability. Process evaluations look at aspects such as peer educator training, satisfaction with involving peers in health promotion activities, whether the programme meets the needs of participants and the generalizability of the programmes to other populations⁵⁷. In a review of evaluation methods for youth peer-delivered health promotion, Harden et al⁵⁷ found that most process evaluations looked at programme acceptability, factors that influenced its implementation and the training of the peer-deliverers.

Outcome evaluation examines the impact of the programme. For youth sexual health peer education, the impact of programmes is often measured in terms of non-behavioural (changes in knowledge, beliefs and attitudes) and behavioural effects^{57–61}. In contrast to qualitative process evaluations, outcome evaluations typically use quantitative methods. The predominant method for

5

outcome evaluation of peer education programmes is questionnaires administered before and after the programme. Outcome evaluations sometimes look at longer term effects by administering questionnaires again six to eighteen months after the programme, although there is significant variation in the follow-up time among studies^{59–62}.

There are some obvious limitations to outcome evaluations. Larger studies can have difficulty locating participants post test. Telephone and MSN peer education that provide youth with confidentiality present challenges for long term follow-up. There is also no way of accounting for information gained outside of the peer education programme without a comparison group.

In a review, Harden et al⁵⁷ found that many youth peer-delivered health promotion programmes are evaluated qualitatively for process, rather than outcome, and that there are very few high quality outcome evaluations of peer education programmes. Studies that included both process and outcome evaluations strengthened the evaluation and provided more context for the interpretation of results. When both outcome and process evaluations are performed, the process evaluation can help to better understand the results of the outcome evaluation. For example, if the outcome evaluation yields unfavourable results, the process evaluation may help to determine why this was the case.

An interesting trend has emerged when comparing process evaluations and outcome evaluations. Outcome studies often demonstrate variable findings with regard to the success of programmes in achieving outcomes, whereas process evaluations more commonly report very positive results and great satisfaction among young people⁵⁷. Harden et al⁵⁷ suggest that these discrepancies may question the reliability of conclusions based on qualitative data, but these discrepancies could illustrate that process and outcome evaluations are examining different benefits of these programmes.

In addition to ensuring that evaluation tools are designed in a way that produces useful and reliable information, there are other factors to consider. Peer education programmes must also ensure that the materials being used are culturally relevant and available in appropriate languages for their target groups⁶³. To achieve this, a deep understanding of the community's values, history and social relationships must be attained. Religious and cultural beliefs are important to consider when attempting to create a culturally sensitive intervention and evaluation tool for peer education programmes. Asking questions about sex and birth control are inappropriate in some cultures and can be met with resistance. The development of evaluation tools should involve members of the target community including, where relevant, cultural, religious, community or political leaders so that points of resistance can be thoroughly explored. Community acceptance could be a criterion for evaluators to consider in assessing peer education programmes. Some authors suggest using religious references within the body of the evaluation tool to reassure communities and to try to gain favour⁶⁴.

Other challenges include developing evaluation methods for small rural communities where confidentiality is an issue. The high rates of migration between urban centres and smaller communities can also create barriers when trying to observe a population over an extended period of time⁶⁵. Evaluation tools should also consider ways to measure gender differences in responses to the content and delivery of peer education. For example, the finding that young men are less likely to consult friends for sexual health information⁶⁶ suggests a lack of comfort in discussing sexual health matters with peers. Despite the number of challenges, there is a need to tailor evaluation tools to specific target populations so that peer education programmes can be effectively assessed and improved if needed. Partnering with agencies that serve the targeted community is crucial to ensuring the tools will be effective.

Conclusion and further suggestions

There is a need for validated evaluation tools for youth sexual health peer education^{1-6,8,9,67}. However, the variety of platforms through which peer education is offered, in conjunction with the variety of methodologies, theories, definitions and cultures considered in peer education programme design, makes the task of creating a single evaluation framework near impossible. One form of evaluation may not adequately measure successes and challenges within the heterogeneity of these programmes. Therefore, the formation of guidelines or principles that individuals and groups can employ in creating their own peer education programme evaluations may facilitate more relevant and effective programme evaluation.

The literature suggests that the predominant methods for evaluation are questionnaires/surveys and interviews. However, with the increasing role of the internet in peer education²² as well as of arts-based approaches²⁸ more innovative evaluation tools should be considered. Using arts-based evaluation techniques⁶⁸ to replace or supplement conventional evaluation methods may provide more youth-friendly approaches to evaluation for both arts-based and traditional peer education programmes. In any case, there is evidence that a mixed-method strategy that includes both process and outcome evaluation methods is most effective. Consultations with relevant stakeholders (funding agencies, peer educators, youth clients, staff, public health officials) would help to identify what outcomes would be reliable indicators of success.

Developing methods of peer education evaluation tailored for specific communities is important. Considerations when designing a culturally sensitive evaluation metric are language, culturally appropriate diction, and the target population's values and social infrastructure. It is interesting to note that while the existence of literature regarding culturally appropriate peer education programmes is limited, the existence of literature about Aboriginal youth peer education programmes in Canada is even scarcer. Future suggestions for research would be to build capacity among Aboriginal youth and other marginalized groups to develop culturally appropriate evaluation tools. All evaluation methods should be designed to assess gender differences in responses to peer education, particularly in the area of sexual health.

In addition, the benefits to the peer educators should be considered when looking at programme success and efficacy. This could be captured through evaluations of peer educators by programme staff and/or other peer educators and through self-reflections by peer educators themselves. Scales that examine leadership and communication skills as well as confidence can be built into outcome evaluation. The impact on youth capacity building should be included when reporting the results of programme evaluation.

Many youth sexual health peer education programmes lack capacity in, and resources to undertake, programme evaluation. Initiatives to build research and evaluation capacity among coordinators and volunteers would greatly benefit the programmes as well as the community of youth sexual health peer educators. This could take many different forms. Workshops on conducting programme evaluation can bring members from many different programmes together to learn about programme evaluation in a supportive environment where partnerships could be developed. Organizations such as the Ontario HIV Treatment Network and the Wellesley Institute sometimes conduct workshops and training sessions on community-based research. These models could be adapted to develop youth-friendly workshops that address the programme evaluation needs of youth sexual health peer education programmes.

Challenges in programme evaluation could also be addressed by creating comprehensive toolkits that community organizations could use to develop their programme evaluation processes. A toolkit could include examples of surveys and open-ended questions to use in programme evaluation, as well as background information on process evaluation, outcome evaluation, quantitative methodology, qualitative methodology and data analysis. Youth should be actively involved in the development of these toolkits, which could be written in language that is accessible to youth and community organizations working with youth. Other suggestions to build capacity in youth sexual health peer education programme evaluation would be to create community–academic partnerships. Through partnerships with academic institutions, community organizations could learn about programme evaluation methodology and academic researchers could learn about the needs of community groups. These partnerships could also open the door for future research collaborations that extend beyond programme evaluation. Working in partnership with a community-based organization to develop and implement evaluation of peer education programmes can provide an excellent opportunity for student placements.

These recommendations may be used by organizations when creating evaluation tools that address the unique goals and needs of their youth sexual health peer education programmes. Most importantly, of course, is the application of the evaluation findings to programme development and modification. This is the ultimate goal of any evaluation strategy.

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References

- Bellingham K, Gillies P. Evaluation of an AIDS education programme for young adults. *Journal of Epidemiology and Community Health* 1993: 47(2): 134–138.
- Fennell R. A review of evaluations of peer education programs. *Journal of American College Health* 1993: 41(6): 251–253.
- Hampton M, Jeffery BL, Fahlman SA, Goertzen JR. A process evaluation of the Youth Educating About Health (YEAH) program: a peer-designed and peer-led sexual health education program. *The Canadian Journal of Human Sexuality* 2005: 14(3/4): 71–83.
- Kaaya S, Flisher A, Mbwambo J, Schaalma H, Aaro L, Klepp K. A review of studies of sexual behaviour of school students in sub-Saharan Africa. *Scandinavian Journal of Public Health* 2002: 30: 148–160.
- 5. Kirby D. Sexuality education: an evaluation of programs and their effects. Santa Cruz, CA: Network Publications, 1984.
- Kirby D, Korpi M, Barth RP, Cagampang HH. The impact of the postponing sexual involvement curriculum among youths in California. *Family Planning Perspectives* 1997: 29: 100–108.
- Maticka-Tyndale E. Evidence of youth peer education success. In: Adamchak SE (ed.) Youth peer education in reproductive health and HIV/AIDS. Youth Issues Paper 7. Arlington, VA: Family Health International (FHI)/YouthNet, 2006.
- Mukoma W, Kagee A, Flisher AJ, Matthews C. School-based interventions to postpone sexual intercourse and promote condom use among adolescents (Protocol). *Cochrane Database of Systematic Reviews* 2007: 1: Art. No.: CD006417.
- 9. Robin L, Dittus P, Whitaker D, et al. Behavioral interventions to reduce incidence of HIV, STD and pregnancy among adolescents: A decade in review. *Journal of Adolescent Health* 2004: **34**(1): 3–26.
- Sciacca J. Student peer health education: a powerful yet inexpensive helping strategy. *The Peer Facilitator Quarterly* 1987: 5: 4–6.
- Frankham J. AIDS peer education project evaluation report. Norwich: University of East Anglia, Centre for Applied Research in Education, 1993.

- Perry CL, Sieving R. Peer involvement in global AIDS prevention among adolescents. University of Minnesota/World Health Organisation. 1993.
- 13. Bluhm J, Volik M, Morgan N. Sexual health peer education among youth in Samara: the Russian Federation. *Entre Nous: The European Magazine for Sexual and Reproductive Health* 2003: (56): 10–11.
- 14. Mason H. Peer education: promoting healthy behaviors. *Advocates for Youth* 1993. http://www.advocatesforyouth.org/publications/factsheet/fspeered.pdf
- Williamson L, Hart G, Flowers P, Frankis JS, Der GJ. The gay men's task force: the impact of peer education on the sexual health behaviour of homosexual men in Glasgow. *Sexually Transmitted Infections* 2001: 77(6): 427–432.
- Philliber S. In search of peer power: a review of research on peer-based interventions for teens. In: *Peer potential: making the most of how teens influence each other*. Washington, DC: The National Campaign to Prevent Teen Pregnancy, 1999.
- Svenson G, Burke H, Johnson L. Impact of youth peer education programs. Youth Research Working Paper No. 9. Research Triangle Park, NC: FHI, 2007.
- 18. Kinzey RE. Using public relations strategies to promote your nonprofit organization. New York, NY: Haworth Press, 1999.
- 19. YouthCo AIDS Society. 2009. http://www.youthco.org.
- 20. Toronto People With AIDS Foundation, 2009. http://www.pwatoronto.org.
- 21. Planned Parenthood Toronto. Planned Parenthood Toronto. 2009. http://www.ppt.on.ca/
- Brown JD, Keller S. Can the mass media be healthy sex educators? *Family Planning Perspectives* 2000: 32(5): 255–256.
- 23. Flicker S, Goldberg E, Read S, et al. HIV-positive youth's perspectives on the Internet and eHealth. *Journal of Medical Internet Research* 2004: **6**(3): e32.
- 24. Lou C, Zhao Q, Gao E, Shah I. Can the internet be used effectively to provide sex education to young people in China? *Journal of Adolescent Health* 2006: **39**(5): 720–728.
- 25. Smith M, Gertz E, Alvarez S, Lurie P. The content and accessibility of sex education information on the internet. *Health Education and Behavior* 2000: **28**(6): 684–694.
- 26. Planned Parenthood Toronto. SpiderBytes. 2009. http://www.spiderbytes.ca.
- 27. Chittick J. Using the internet: cost-effective way to expand AIDS prevention efforts for youth. *International Conference on AIDS* 1998: **12**: 154–155 (abstract no. 13342).
- 28. Gendering Adolescent AIDS Prevention. 2009. http://www.utgaap.org.
- 29. Boal A. Theatre of the oppressed. New York, NY: Theatre Communications Group, 1993.
- 30. Marlatt GA. Harm reduction: come as you are. Addictive Behaviors 1996: 21(6): 779-788.
- 31. Ontario Harm Reduction Distribution Program. 2009. http://www.ohrdp.ca.
- 32. TRIP! Project. 2009. http://www.tripproject.ca/trip/
- Stakic S, Zielony R, Bodiroza A, Kimzeke G. Peer education within a frame of theories and models of behaviour change. *Entre Nous: The European Magazine for Sexual and Reproductive Health* 2003: (56): 4–6.
- 34. Gange G, Kanepaja-Vanaga E, Upenieks R. *Handbook for peer educators HIV/AIDS and reproductive health*. UNDP: Ministry of Education and Science, 2003.
- 35. National Hemophilia Foundation. *Peer-to-peer health education programs for youth: their impact on comprehensive health education.* New York, NY: The Foundation, 1994.
- DiClemente RJ. Preventing HIV/AIDS among adolescents: schools as agents of behavior change. JAMA 1993: 270(6): 760–762.
- 37. Ford N, Inman M. Safer sex in tourist resorts. World Health Forum 1992: 13: 77-80.
- 38. Hamilton V. HIV/AIDS: a peer education approach. Youth Policy 1992: 36: 27-31.

- 39. Health Education Authority. *Peers in partnership: HIV/AIDS education with young people in the community*. London: Health Education Authority, 1993.
- Klepp K, Halper A, Perry C. The efficacy of peer leaders in drug abuse prevention. *Journal of School Health* 1986: 56(9): 407–411.
- Phelps FA, Mellanby AR, Crichton NJ, Tripp JH. Sex education: the effect of a peer programme on pupils (aged 13–14 years) and their peer leaders. *Health Education Journal* 1994: 53: 127–139.
- 42. National 4-H Council. *Creating youth/adult partnerships: training curricula for youth, adults and youth/ adult teams.* Bethesda, MD: The Council, 1999.
- 43. Ghaleb T. *Peer education could help young people in Yemen fight AIDS*. 2007. Retrieved from Yemen Observer Web site: http://www.yobserver.com/sports-health-and-lifestyle/10012844.html.
- Gasa NB. Skills building, supervision and support for peer educators in a university setting. *International Conference on AIDS* 2002; 14: Abstract No. TuPeF5375.
- Kelly JA, St Lawrence JS, Diaz YE, et al. HIV risk behavior reduction following intervention with key opinion leaders of a population: an experimental community-level analysis. *American Journal of Public Health* 1991: 81(2): 168–171.
- O'Hara P, Messick BJ, Ronald FR, Parris D. A peer-led AIDS prevention program for students in an alternative school. *Journal of School Health* 1996: 66: 176–182.
- Rickert VI, Jay MS, Gottlieb A. Effects of a peer-counseled AIDS education program on knowledge, attitudes, and satisfaction of adolescents. *Journal of Adolescent Health* 1991: 12: 38–43.
- Slap GB, Plotkin SL, Khalid N, Michelman DF, Forke CM. A human immunodeficiency virus peer education program for adolescent females. *Journal of Adolescent Health* 1991: 12(6): 434–442.
- Walker SA, Avis M. Common reasons why peer education fails. *Journal of Adolescence* 1999: 22(4): 573–577.
- 50. West P, Mitchell L. Smoking and peer influence. In: Goreczny AL, Hersen N (eds) *Handbook of paediatric and adolescent health psychology*. Needham Heights, MA: Allyn and Bacon, 1995.
- Campbell C, MacPhail C. Peer education, gender and the development of critical consciousness: participatory HIV prevention by South African youth. *Social Science & Medicine* 2002: 55(2): 331–345.
- Campbell C. Creating environments that support peer education: experiences form HIV/AIDS-prevention in South Africa. *Health Education* 2004: **104**(4): 197–200.
- 53. Kerr J. Community health promotion: challenges for practice. Edinburgh: Elsevier Health Sciences, 2000.
- 54. United Nations. *World youth report 2007: young people's transition to adulthood: progress and challenges*. United Nations, 2007. http://www.un.org/esa/socdev/unyin/wyr07.htm
- 55. Duryea EJ. Principles of non-verbal communication in efforts to reduce peer and social pressure. *The Journal of School Health* 1991: **61**(1): 5–10.
- 56. Milburn K. A critical review of peer education with young people with special reference to sexual health. *Health Education Research* 1995: **10:** 407–420.
- 57. Harden A, Oakley A, Oliver S. Peer-delivered health promotion for young people: a systematic review of different study designs. *Health Education Journal* 2001: **60**: 339–353.
- Caron F, Godin G, Otis J, Lambert LD. Evaluation of a theoretically based AIDS/STD peer education program on postponing sexual intercourse and on condom use among adolescents attending high school. *Health Education Research* 2004: 19(2): 185–197.
- Boyer CB, Sieverding J, Siller J, Gallaread A, Chang YJ. Youth united through health education: community-level, peer-led outreach to increase awareness and improve noninvasive sexually transmitted infection screening in urban African American youth. *Journal of Adolescent Health* 2007: 40(6): 499–505.

- Fang X, Stanton B, Li X, Feigelman S, Baldwin R. Similarities in sexual activity and condom use among friends within groups before and after a risk-reduction intervention. *Youth & Society* 1998: 29(4): 431–450.
- Mahat G, Scoloveno MA, Ruales N, Scoloveno R. Preparing peer educators for teen HIV/AIDS prevention. *Journal of Pediatric Nursing* 2006: 21(5): 378–384.
- Morrison DM, Casey EA, Beadnell BA, et al. Effects of friendship closeness in an adolescent group HIV prevention intervention. *Prev Sci* 2007: 8: 274–284.
- 63. Linda Simkin et al. *Evaluation of the HIV/AIDS education program/including condom availability,* 1990–1992. OREA Report. Brooklyn, NY: New York City Board of Education, 1992.
- 64. O'Toole BJ, McConkey R, Casson K, Goetz-Goldberg D, Yazdani A. Knowledge and attitudes of young people in Guyana to HIV/AIDS. *International Journal of STD and AIDS* 2007: **18**: 193–197.
- Henderson PC. South African AIDS orphans: examining assumptions around vulnerability from the perspective of rural children and youth. *Childhood* 2006: 13(3): 303–327.
- Boyce W, Doherty M, Fortin C, MacKinnon D. Canadian youth, sexual health and HIV/AIDS study: factors influencing knowledge, attitudes and behaviours. Toronto, ON: Council of Ministries of Education, 2003.
- Gallant M, Maticka-Tyndale E. School-based HIV prevention programmes for African youth. Social Science & Medicine 2004: 58(7): 1337–1351.
- 68. Charlton M. Art-based evaluation techniques. Toronto: Resonance Creative Consulting, 2008.