September 2010 – SUPPORT Summary of a systematic review

Is peer education an effective method for HIV prevention in low- and middle-income countries?

Peer education uses individuals to convey specific information, awareness or behaviours to members of a peer or target group. Peer educators must share common key characteristics with those being targeted, but may either come from inside or outside it. This transmission of information to others is used to inform and influence the decisions taken – and thus the health behaviours – within the targeted communities. Prior to an intervention, peer educators are given appropriate training. Peer education is a widely used strategy to disseminate information on sexually transmitted infections (STIs), in low- and middle-income (LMIC) countries. It has been argued that peer education empowers both the peer educator and the target group, and is more cost-effective than interventions that rely on professional staff.

Key messages

- **Peer education may improve knowledge about HIV and about condom use in all target groups except amongst transport workers**
- **Peer education may reduce the sharing of drug injection equipment**
- **We are very uncertain whether the use of peer education is associated with an increase in STI infections rates in transport workers**
- **There is limited evidence regarding different approaches for recruiting, training and supervising, compensating and retaining peer educators**

Who is this summary for?

People making decisions concerning HIV prevention strategies in developing countries

! This summary includes:

- **Key findings** from research based on a systematic review
- **Considerations about the relevance of this research** for low- and middle-income countries

X Not included:

- Recommendations
- Additional evidence not included in the systematic review
- Detailed descriptions of interventions or their implementation

This summary is based on the following systematic review:

Medley A, Kennedy C, O'Reilly K, Sweat M. Effectiveness of peer education interventions for HIV prevention in developing countries: a systematic review and meta-analysis. AIDS Educ Prev 2009; 21:181-206.

What is a systematic review?

A summary of studies addressing a clearly formulated question that uses systematic and explicit methods to identify, select, and critically appraise the relevant research, and to collect and analyse data from the included studies.

SUPPORT – an international collaboration funded by the EU 6th Framework Programme to support the use of policy relevant reviews and trials to inform decisions about maternal and child health in low- and middle-income countries. www.support-collaboration.org

Glossary of terms used in this report: www.support-collaboration.org/summaries/explanations.htm

Background references on this topic: See back page.

Background

Peer education uses individuals who share key characteristics with members of a target group to convey specific information, awareness or behaviours. Peer educators receive training related to the issue about which the are asked to educate others. Such educational interventions are based on the assumption that peers exert a strong influence on individual knowledge and behaviour. In certain instances, peers are seen as more 'acceptable' than outside professionals, particularly if sensitive topics are being discussed. Peer education can also help to gain better access to hard-to-reach populations. Such advantages make peer education a preferred tool in HIV-prevention interventions, and it is often used to spread knowledge about STIs, raise risk awareness, and promote safe sex strategies, particularly the use of condoms.

This review on the impact of peer education on HIV/AIDS-related outcomes is one of a series of systematic reviews on behavioral interventions for HIV prevention in LMICs.

How this summary was prepared

After searching widely for systematic reviews that can help inform decisions about health systems, we have selected ones that provide information that is relevant to low- and middle-income countries. The methods used to assess the quality of the review and to make judgements about its relevance are described here: www.support-collaboration.org/summaries/methods.htm

Knowing what's not known is important

A good quality review might not find any studies from low- and middle-income countries or might not find any well-designed studies. Although that is disappointing, it is important to know what is not known as well as what is known.

About the systematic review underlying this summary

Review objective: To assess the effect of peer-education interventions on HIV knowledge, sharing of drug injection equipment, condom use, and STI infection in developing country settings.

	What the review authors searched for	What the review authors found
Interventions	Peer education (the sharing of information by a peer in small groups or one-to-one)	30 studies including: ▪ 3 randomised controlled trials ▪ 14 cross-sectional studies ▪ 10 before-and-after studies ▪ 3 non-randomised controlled trials
Participants	No restrictions	8 studies among youth 12 studies among commercial sex workers 4 studies among injection drug users 3 studies among transport workers 6 studies among heterosexual adults 2 studies among people in jail 1 study among miners
Settings	Developing country (according to The World Bank)	13 studies from sub-Saharan Africa 10 studies from East and Southeast Asia 5 studies from Central Asia 2 studies from Latin America and the Caribbean
Outcomes	Behavioural, psychological, social, care, or biological outcome(s) related to HIV prevention	26 studies assessed HIV knowledge[1] 6 studies assessed drug injection equipment sharing[2] 29 studies assessed condom use[3] 11 studies assessed STI infection[4]

Date of most recent search: November 2006

Limitations: This systematic review has important limitations.[5]

1. Only peer-reviewed journal articles were considered.
2. There were differences between studies with regard to outcome definition.

The average effect size was calculated if articles reported different measures for the same outcome (e.g. condom use). In such instances, a stratified analysis was undertaken (e.g. condom use by partner type and target population). However, this approach did not address the fact that the time window in which measurements were taken might also be important and might therefore mask important differences.

Medley A, Kennedy C, O'Reilly K, Sweat M. Effectiveness of peer education interventions for HIV prevention in developing countries: a systematic review and meta-analysis. AIDS Educ Prev 2009; 21:181–206.

[1] The outcome "HIV knowledge" included variables measuring correct and incorrect information about modes of HIV transmission and prevention.

[2] The outcome "injection drug equipment sharing" included reported episodes of shared needles/syringes, rinse water, and/or cookers.

[3] The outcome "condom use" referred to the proportion of respondents who either (a) did or did not use condoms or (b) did or did not have unprotected sex.

[4] The outcome "STI infection" included STI incidence, current prevalence, and lifetime prevalence, and was measured through self-reporting, chart reviews, and clinical diagnoses.

[5] In addition to the listed limitations identified using the GRADE process, the following items should be considered:

– A numerical score measuring rigour was developed for the review. However, equal weighting was given to, on one hand, a study which had used pre- and post-test measures and a random selection of subjects for its assessment and, on the other, a study that had used control groups and random allocation. The latter group, we contend, was *more* important. In the meta-analysis, estimates from studies of varying rigour appeared to have been pooled and the rigour score did not seem to have been applied.– It would have been better to define the inclusion criteria and to undertake a meta-analysis of the findings from the included studies, possibly using a sensitivity analysis with more/less strict inclusion criteria.

Summary of findings

Thirty studies were conducted among different population subgroups including youth, commercial sex workers, drug injection users, transport workers, heterosexual adults, prisoners, and miners. The studies were conducted in sub-Saharan Africa, and studies were also reported in Asia, Latin America, and the Caribbean. Three of the studies included were randomised controlled trials (3 studies reported outcomes on levels of HIV knowledge, and 3 on condom use). The others were mostly cross-sectional and uncontrolled before-and-after studies. HIV knowledge, drug injection equipment use, condom use, and STI infection were considered as outcomes.

Different implementation issues such as recruiting, training and supervision, compensation and the retention of peer-educators were reported in a subset of the studies. The described recruitment and training and supervision strategies were generally successful, and most programmes paid a small compensation fee to peer educators. Peer educator retention rates were reported to be low in most studies. However, this information appeared to be anecdotal and not collected systematically during process evaluations.

About the quality of evidence (GRADE)

⊕⊕⊕⊕
High: Further research is very unlikely to change our confidence in the estimate of effect.

⊕⊕⊕◯
Moderate: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.

⊕⊕◯◯
Low: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.

⊕◯◯◯
Very low: We are very uncertain about the estimate.

For more information, see last page

- **Peer education may improve knowledge about condom use and HIV in all target groups except amongst transport workers**
- **Peer education may reduce the sharing of drug injection equipment**
- **We are very uncertain whether the use of peer education is associated with an increase in STI infections rates in transport workers**
- **There is limited evidence regarding different approaches for recruiting, training and supervising, compensating and retaining peer educators**

Outcomes	Impact	Number of participants (studies)	Quality of the evidence (GRADE)
HIV knowledge	Across target groups: - Knowledge about HIV increased: OR 2.28; 95% CI 1.88, 2.75 Stratified by target group: - Significantly increased (p<0.05) among all target groups except transport workers	15,989 (18 of 26 studies)	⊕⊕◯◯ **Low**
Injection drug equipment sharing	Sharing of drug injection equipment reduced: OR 0.37; 95% CI 0.20, 0.67	3,240 (4 of 6 studies)	⊕⊕◯◯ **Low**
Condom use	Across target groups: - Condom use increased: OR 1.92; 95% CI 1.59, 2.33 (all partners) - Condom use increased: OR 1.94; 95% CI 1.27, 2.94 (regular partners) - Condom use increased: OR 2.23; 95% CI 1.70, 3.09 (casual partners) Stratified by target group: - Condom use significantly increased (p<0.05) among all target groups except youth and adolescents	17,916 (19 of 29 studies)	⊕⊕◯◯ **Low**
STI infection	Across target groups: uncertain whether STI infection rates increased: OR 1.22; 95% CI 0.88, 1.71 (p>0.05) Stratified by target group: - STI infection rates significantly increased (p<0.05) among transport workers (OR 1.95; 95% CI 1.45, 2.62)	11,105 (7 of 11 studies)	⊕◯◯◯ **Very low**

p: p-value GRADE: GRADE Working Group grades of evidence (see above and last page)

Relevance of the review for low- and middle-income countries

➔ Findings	▷ Interpretation*
APPLICABILITY	
➔ All the studies included were conducted in LMICs.	▷ *The study findings were not analysed in terms of the size of the effect, or the regions, economic situations, or socio-political systems in which they were conducted* ▷ *In some countries, interventions targeting certain groups may be difficult to implement (see 'Equity' section below).*
EQUITY	
➔ All the studies focused on a specific group. ➔ The review did not examine the effects of peer education interventions on specific ethnic, religious and sexual minorities.	▷ *The prevailing socio-political system of a country impacts on the visibility and accessibility of specific target groups such as ethnic, religious and sexual minorities, illegal drug users, etc. Such differences probably impact on the feasibility and effectiveness of interventions targeted to such groups.*
ECONOMIC CONSIDERATIONS	
➔ The review did not provide information on absolute costs or cost-effectiveness.	▷ *Peer education is assumed to be more cost-effective than other interventions. However, very little information about cost-effectiveness was provided.* ▷ *The effect of payments for peer educators on intervention effects is unknown.* ▷ *Considerable financial and human resources are required to sustain peer education programmes due to high rates of peer turnover, supervision requirements etc.* ▷ *It is unclear whether peer education interventions could lead to cost savings through reductions in levels of STI infections.*
MONITORING & EVALUATION	
➔ The quality of evidence on the effects of peer education interventions on behavioural outcomes is low. ➔ The quality of evidence on the effects of peer education interventions on biological outcomes is very low. ➔ In high-income countries it is not possible to assume that peer education interventions that are effective in particular settings will work in others.	▷ *Any extension of peer education interventions to additional target groups (e.g. ethnic, religious and sexual minorities) should be monitored and evaluated.* ▷ *Further evaluations of the effectiveness of biological outcomes are needed.* ▷ *There is a need for process evaluations of how context influences implementation.*

*Judgements made by the authors of this summary, not necessarily those of the review authors, based on the findings of the review and consultation with researchers and policymakers in low- and middle-income countries. For additional details about how these judgements were made see: http://www.support-collaboration.org/summaries/methods.htm

Additional information

Related literature

Campbell C, Mzaidume Z. Grassroots participation, peer education, and HIV prevention by sex workers in South Africa. *American Journal of Public Health* 2001, 91(12): 1978–1986.

Campbell C, MacPhail C. Peer education, gender and the development of critical consciousness: Participatory HIV prevention by South African youth. *Social Science and Medicine* 2002; 55(2):331–345.

Hutton G, Wyss K, N'Diekhor Y. Prioritization of prevention activities to combat the spread of HIV/AIDS in resource constrained settings: a cost-effectiveness analysis from Chad, Central Africa. *International Journal of Health Planning and Management* 2003; 18(2): 117–36.

Population Council. Peer Education and HIV/AIDS: Past Experience, Future Directions. 2002. Available at: www.popcouncil.org/pdfs/peer_ed.pdf

Strange V, Forrest S, Oakley A. Peer-led sex education – characteristics of peer educators and their perceptions of the impact on them of participation in a peer education programme. *Health Educ Res* 2002; 17(3):327–37.

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Conflict of interest

None declared. For details, see: www.support-collaboration.org/summaries/coi.htm

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This summary should be cited as

Steinmann P. Is peer education effective for HIV prevention in low- and middle-income countries (LMICs)? A SUPPORT Summary of a systematic review. September 2010. www.support-collaboration.org/summaries.htm

Keywords

All Summaries: evidence-informed health policy, evidence-based, systematic review, health systems research, health care, low- and middle-income countries, developing countries, primary health care, peer education, effectiveness, HIV

About quality of evidence (GRADE)

The quality of the evidence is a judgement about the extent to which we can be confident that the estimates of effect are correct. These judgements are made using the GRADE system, and are provided for each outcome. The judgements are based on the type of study design (randomised trials versus observational studies), the risk of bias, the consistency of the results across studies, and the precision of the overall estimate across studies. For each outcome, the quality of the evidence is rated as high, moderate, low or very low using the definitions on page 3.

For more information about GRADE:
www.support-collaboration.org/summaries/grade.htm

SUPPORT collaborators:

The Alliance for Health Policy and Systems Research (HPSR) is an international collaboration aiming to promote the generation and use of health policy and systems research as a means to improve the health systems of developing countries. www.who.int/alliance-hpsr

The Cochrane Effective Practice and Organisation of Care Group (EPOC) is a Collaborative Review Group of the Cochrane Collaboration: an international organisation that aims to help people make well informed decisions about health care by preparing, maintaining and ensuring the accessibility of systematic reviews of the effects of health care interventions.
www.epocoslo.cochrane.org

The Evidence-Informed Policy Network (EVIPNet) is an initiative to promote the use of health research in policymaking. Focusing on low- and middle-income countries, EVIPNet promotes partnerships at the country level between policy-makers, researchers and civil society in order to facilitate both policy development and policy implementation through the use of the best scientific evidence available. www.evipnet.org

For more information:
www.support-collaboration.org

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