



# Peer-based programs to support antiretroviral adherence



## Questions

1. What is the evidence of the effectiveness of peer-based programs to support adherence to highly active antiretroviral therapy (HAART)?
2. What population-related variables may be related to the success of peer-based adherence programs? (e.g. age, race, gender, drug use, homelessness)
3. What approaches have been successfully used to select peers and match them to participants in adherence support programs?
4. What supports and education for peers have successful programs provided and how do these programs benefit peers?

## Key Take-Home Messages

- There is some evidence to suggest that peer-based interventions can be effective and cost-effective tools for improving adherence to HAART among people living with HIV (1-6). However, in other studies, peer-based interventions had no effect on levels of adherence and medical outcomes (7;8).
- A few studies noted that more research is needed to fully address the efficacy of peer-based interventions to improve HAART adherence (1;7;9).
- There is evidence to suggest that interventions tailored for specific groups – such as women (3), children (1), African, Caribbean and Black populations (10), people who use drugs (2;9) and people who are homeless (3) – can be effective.
- Most interventions selected peers who were HIV-positive, adherent to their treatment and capable of communicating empathy (4-6;10;11).
- Data suggests that peer relationships can be beneficial to the peer as well as the patient, and that the reciprocal support that peers receive may play a key role in attracting and retaining peers (11).
- One unique study involved participants alternating between two roles: someone advocating with a peer and someone who was receiving that health advocacy from another peer. This approach was highly effective because it took advantage of peer pressure as well as the fact that people internalized the information they were advocating to others (2).

## EVIDENCE INTO ACTION

The OHTN Rapid Response Service offers HIV/AIDS programs and services in Ontario quick access to research evidence to help inform decision making, service delivery and advocacy. In response to a question from the field, the Rapid Response Team reviews the scientific and grey literature, consults with experts, and prepares a brief fact sheet summarizing the current evidence and its implications for policy and practice.

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## The Issue and Why It's Important

The advent of HAART in the 1990s has helped transform HIV/AIDS into a manageable, chronic condition. HAART suppresses viral replication and restores damaged immune systems (9). It leads to reduced HIV RNA levels, increased CD4 cell counts and decreased morbidity and mortality (1).

As a result of HAART, people living with HIV are now living longer lives. Yet the efficacy of HAART is compromised when users exhibit low levels of adherence (or compliance) with prescribed regimens (e.g. not following the medication plan developed with the physician).

A meta-analysis of 31 North American adherence studies found that 55% of HIV-infected individuals achieve adequate adherence (12). In both resource-rich and resource-constrained settings, most patients on HAART do not maintain optimal levels of adherence (6), therefore, it is essential to identify effective and affordable methods to encourage and improve HAART adherence. One study (10) contends that peers can deliver behavioural interventions as effectively as health professionals. It posits that peers have been successfully delivering safer sex and safer injection messages in programs that aim to reduce HIV risk behaviours. We found numerous studies that examined the efficacy of using peer-based supports and interventions to improve HAART adherence for people living with HIV.

In fact, suboptimal adherence to medication is a global problem not limited to HIV. According to the World Health Organization (13), in developed countries, only one in two people adhere to their long-term therapy for chronic illnesses; the rate is even lower in developing countries. According to a Cochrane review by Haynes et al (14), those who are prescribed self-administered medication usually take less than half the recommended dosage. The review goes on to say that research regarding innovations that help patients suffering from long-term medical disorders adhere to their treatments should be a high priority.

## What We Found

### Evidence to support the use of peers

Several studies (4-6) demonstrated the efficacy of peer-based programs in promoting and improving adherence to HAART.

One study (4) used a six-week intervention of peer-delivered modified directly observed therapy (mDOT) with 350 men and women living with HIV in Mozambique. The effect of the intervention on adherence was evaluated six and 12 months after HAART initiation. After attending appointments on their first day of HAART treatment (baseline), participants were randomly assigned to either the peer-based mDOT intervention or one based on standard care. In terms of the intervention itself, peers had five meetings per week with participants to provide social support, information about the benefits of HAART, and information about the role of stigma and its effect on adherence. Participants were also encouraged to attend community support groups. Results showed that participants who received mDOT were more likely than those who received standard care to achieve adherence levels of 90% or more: a level commonly associated with positive clinical outcomes. More broadly, the mDOT group had 7% greater adherence than the standard care group at both six and 12 months. Those in the peer group were also more likely to be engaged with the health care system (i.e. obtain their CD4 counts, attend support sessions) than the standard care

participants. In this study, the use of peers is more cost-effective than standard care and therefore more suitable for resource-constrained settings.

A study in Spain (5) compared the efficacy of two interventions to improve adherence: one involving a health professional and the other involving a peer. In this particular study, peers were HIV-positive individuals who were adherent to their treatment, capable of communication and empathy, and had no prior experience as a therapist. Conducted with 240 participants (120 per group), the intervention involved four visits over a 24-week span. At baseline, only 47% of all participants were classified as adherent to their treatment. The analysis indicated that this percentage increased as the intervention progressed. The peer-based intervention produced better results than the one conducted by a health professional, although the difference was not deemed significant. In the peer intervention group, 50% of the participants were adherent to their treatment at baseline and 60% were adherent by the last visit. For this group, adherence increased by 11% at week 16 and by 10% at week 24. The researchers concluded that the peer-based intervention is a viable, effective tool that produces results that are at least as good as those delivered by health professionals. According to the study, peers provide a substantial amount of rapport and empathy as well as new sources of information and alternative explanations. Much like the previous study, these findings suggest a potential cost-saving opportunity for organizations.

Another study (6), conducted in Seattle, examined the effects of a three-month peer support intervention to improve HAART adherence among 224 HIV-positive patients. Over the course of the intervention, all peers and participants had bi-weekly meetings as well as weekly phone calls. The meetings were designed to identify barriers to HAART adherence and to develop strategies to overcome them while the phone calls were to provide more personal, one-on-one attention. Peers were selected based on their own levels of adherence and the frequency with which they attended clinic appointments. They underwent 15 hours of training. The peer support intervention was associated with higher levels of self-reported adherence (an increase of 9% at post-intervention). However, these numbers were not maintained at participants' follow-up assessments, which took place three, six and nine months after their baseline visits. The researchers concluded that peer-based interventions can have a positive effect on adherence but for maximum effect, they must be ongoing and long-term. The data also suggested that the intervention was less effective for those who missed some of the group meetings. .

### **Evidence that peer-based interventions have no effect on adherence**

In other studies, there was no indication that peer-based interventions had an effect (positive or negative) on adherence.

In one study (7), 966 HIV-positive injection drug users from Baltimore, Miami, New York City, and San Francisco were recruited over a period of a year and assigned to either a peer mentoring intervention or one involving pre-recorded video. Although participants reported a reduction in risk behaviours over time (i.e. injection drug use, sexual risk), neither group reported a change in medical care or adherence, although researchers observed a slight increase in adherence. The study concluded that more research needs to be done on behavioural interventions to improve adherence for HIV-positive injection drug users.

Another study conducted with 136 men and women living with HIV in New York City (8) examined the effects of a peer-led social support intervention versus one based on clinical care on HAART adherence. Over the three-month program,

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HIV-positive individuals provided social support to the participants. While the findings did indicate that greater exposure to the intervention was associated with higher self-reported adherence, the findings were deemed null by the researchers. The researchers indicated that the null findings may have been due to the short duration of the intervention or to the nature of the sample itself. They concluded that more efforts need to be made to battle low adherence.

### **Population-specific interventions and their efficacy**

There is evidence to suggest that interventions to improve adherence that are targeted to certain populations are effective. Such interventions have been designed for women (3), children (1), African, Caribbean and Black populations (10), people who use drugs (2;9), and people who are homeless (3). Targeting allows interventions to be customized to priority populations.

In a one-year peer-led intervention (3) to improve HAART adherence among female sex workers who use drugs in Vancouver, 20 HIV-positive women were enrolled in the program and attended an average of 50 meetings with a peer. Most women reported an increase in adherence as the meetings progressed. Moreover, the number of viral load tests increased by 40% over the intervention period. The researchers believed the intervention to be a promising program for women who may not have sufficient access to treatment.

To address sub-optimal adherence to HAART among children, an intervention was developed and tested in France (1). The study was comprised of 30 children, aged 12 to 17, and involved a 90-minute session every six weeks for 26 months. In this case, there was no change in self-reported levels of adherence; however, the number of participants with a suppressed viral load increased from 30% to 80%. Researchers concluded that the intervention had a positive effect on the participants' mental well-being, which can improve medical outcomes.

Because HIV disproportionately affects African, Caribbean and Black populations, an intervention in Chicago was designed specifically to improve adherence for this group (10). The intervention consisted of numerous one-on-one sessions with an HIV-positive peer, some mandatory and some optional. To customize the intervention to the African American population, researchers selected peers who were culturally similar – based on the premise that they would be better able to relate to participants. Peers were also matched to participants based on their ethnicity, age and socioeconomic background. As a result of this selection and matching process, participants felt very comfortable discussing private and sensitive issues with their peers. No results were reported in this study, but the process may help other organizations create and tailor interventions to specific population groups in an effort to improve adherence.

A systematic review (9) that sought to measure the efficacy of peer-led interventions to improve adherence among HIV-positive people who use drugs produced some promising results. Some randomized controlled trials within the systematic review suggested that these interventions can have a positive, short-term effect on adherence. However, the results were not sustained after the intervention ceased.

### **Selection and matching process for peers and subjects**

Many interventions discussed the importance of selecting peers who are HIV-positive, adherent to their treatments, diligent in attending their clinical appointments, exhibit social skills and willing to undergo a training period (4-6;10;11). Peers were often current patients at the same institution as the

participants (6) and individuals with no prior experience as a therapist (5). In one study, peers were selected based on how culturally similar they were to the participants, assuming that they will be better able to relate to them on a personal level (10).

### How to support and retain peers

One study (11), which included interviews with nine HIV-positive individuals acting as peers in New York City, offered evidence that peers as well as participants benefit from the intervention. In this case, the peers were offering support to other people living with HIV to promote adherence to HAART. The study concluded that peers, even if they have low levels of education, can benefit from working with participants living with HIV. The peers reported four main benefits from their relationships with the participants, including:

- **Social acceptance:** Their work led to a decrease in feelings of social isolation as they were working with others going through the same challenges as them. As a result, they felt less alone and less stigmatized.
- **Reciprocal support:** The peers also reported that the support was reciprocal and that they gained personal satisfaction not only from providing support but also from receiving it. The peers described the support they received as social, emotional, informational and spiritual. In fact, the sense of mutual and reciprocal support that peers gain may be an effective way to attract, support and retain peers.
- **Personal growth and empowerment:** The intervention helped peers become more confident when dealing with the medical community. It made them feel that it was acceptable to talk openly about their HIV diagnosis, which led to a deep sense of satisfaction.

Peers also reported that being a peer was sometimes frustrating because some participants were unwilling to accept their help. They also reported the distress that came when a group member passed away.

Another strategy to attract and retain peers may be incentives. In one study (2), peers were offered the incentive of health benefits for their participation. They were also offered financial incentives based on their level of success in improving a participant's adherence to medical care.

### The potential for people to be peers and participants

One six-month study (2) that involved 14 people living with HIV who used drugs in New Haven may be instructive. The goal was to create a peer-driven intervention that could be used as a substitute for traditional primary care. The goal was to monitor adherence and to use a form of peer pressure to encourage participants to adhere to medical care.

The study was unique because each participant played two roles: health advocate and peer or service user. The health advocates were the promoters of adherence and the peers were the ones on the receiving end of that promotion. Each participant alternated between being a health advocate and a peer, yet no two participants served as both health advocate and peer for each other. The researchers found the intervention to be effective because it drew on the power of peer pressure. In addition, when an advocate promoted the importance of looking after one's health, he or she often internalized that information and attitude. The results support the feasibility of this approach: participants kept or rescheduled 95% of their appointments with their HIV support services. One component of the study involved counting pills and calculating adherence scores. The average adherence score was 90%. All subjects were enthusiastic about the opportunity and none dropped out. Researchers concluded that interventions such as these are a viable alternative social support mechanism to improve HAART adherence among people living with HIV, especially those who use drugs. It incorporated six

factors that have been effective in producing behavioural change: stronger medical knowledge, cues and reminders, positive rewards, improved self-management skills, expressed concern from others and repetition (2).

## **Factors That May Impact Local Applicability**

The majority of papers included in this summary were from high income countries sharing similarities to Canada. As a result, findings may not be applicable to other jurisdictions where peers may not be as connected to the health care system, or where stigma and discrimination limit the visibility or mobilization of people living with HIV.

## **What We Did**

We searched Medline, Embase and PsychInfo, using a combination of text terms HIV AND adherence AND peer. We also conducted Google searches using this word combination. In addition, we reviewed references in relevant studies found. All searches were limited to articles published since 1996 in English.

