Researchers have identified varying degrees of success when using motivational interviewing to increase adherence to antiretroviral therapy

Motivational interviewing and HIV drug adherence

In this article...

- The influence of motivational interviewing on adherence with antiretroviral therapy
- Recommendations for working with this patient group

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Despite advances in HIV treatment, adherence rates remain low, with only around 50-70% of those who should be taking antiretroviral therapy fully concordant with the treatment regimen. This article explores why this might be. It analyses the literature on motivational interviewing, and its effectiveness in improving patient adherence to antiretroviral therapy in the treatment of HIV.

Here has been major advances in HIV treatment over the past 15 years, and it is now considered to be a manageable long-term condition. However, adherence to medication remains a significant problem in HIV care, with around only 50-70% of people taking antiretroviral therapy (ART) as prescribed (Krummenacher et al, 2011; Cook, 2009). This could be due to a range of factors including poor memory, lifestyle, adverse side-effects or motivational factors associated with health beliefs and stigma.

Patients need to adhere to around 95% of the treatment to promote therapeutic effects and prevent resistance (Diorio et al, 2008). Failure to do this can lead to increased viral transmission, limitation of future treatments, illness and the development of AIDS (British HIV Association, 2012).

One approach suggested to tackle this problem is motivational interviewing (MI), a behavioural intervention that can be used by nurses in partnership with their patients to identify and challenge barriers to adherence. MI was developed by Miller (1983) who first implemented the therapy for people with alcohol problems. It first came into prominence in the mid 1990s and has been successfully used in substance-use and weight-loss programmes, and is recommended by the National Institute for Health and Clinical Excellence (2011) for treating alcohol dependence in the UK. The techniques of MI are rooted in Prochaska and DiClemente's (1982) transtheoretical behaviour change model.

The individual approach promoted by MI is applicable to HIV medication adherence as patients are guided in identifying their personal barriers to change. The therapist takes a positive approach to support empowerment to initiate change (Rollnick et al, 2008).

Literature review

We found eight primary research studies that were applicable for inclusion in this systematic review. Overall, these studies support the use of motivational interviewing as an intervention to improve adherence to HIV medications. It should be noted, however, that few studies conclusively demonstrated sustained improvements in clinical outcomes, or the long-term effectiveness of the intervention.

Parsons et al (2007) showed short-term improvement in viral load, CD4 count and adherence measured at three months, but at the six month only adherence measures were maintained. Cooperman et al (2012) found counselling significantly improved ART adherence. However, no influence was observed on viral load, suggesting more intensive therapy may be needed.

Results from Cook et al (2009) showed 92.9% of participants achieved more than 95% adherence on their final contact.

Keywords: HIV/Adherence/Motivational interviewing

5 key points

1 Advances in HIV treatment mean it is now a manageable long-term condition

2 It is thought that as few as 50-70% of those on antiretroviral therapy are taking it as prescribed

3 Increasing the length and quality of therapy improves clinical outcomes

4 Motivational interviewing has the potential to improve adherence to antiretroviral therapy, but professionals should consider other methods as well

5 It is critical to develop a therapeutic relationship with patients to maximise the effectiveness of treatment methods
Similarly, Diiorio et al (2008) found the intervention increased the percentage of doses taken and those taken on time. It was noted the more counselling sessions attended, the better adherence was at every follow-up (Holstad et al, 2011). Participants in Krummenacher et al’s (2011) research maintained adherence of 87%, with 88% of doses taken correctly, while the number of participants with undetectable viral load increased significantly.

Of the eight studies reviewed, only one reported no significant link between the therapeutic intervention and adherence levels (Samet et al, 2005). However, this result was potentially affected by limitations due to difficulties with the sample.

**Measurement of outcomes**

**Adherence: electronic measurement**

Comparing the success rate of MI across the studies is complicated by the variation in outcomes measured and varying measures of adherence to medication.

Methods of recording adherence included participants self-reporting adherence (used in five of the eight studies), pill counts (used in two studies), and interviews (used in one study) and the Medication Event Monitoring System (MEMS).

The MEMS, which was used in six of the eight studies, is an electronic bottle cap device used to record the frequency and timing of opening medication bottles. Samet et al (2005) found MEMS caused difficulties with certain participants and produced potentially inaccurate data; only 29% of their study participants achieved useable baseline MEMS data.

The study by Holstad et al (2011) included questionnaires on MEMS cap use and reported issues with the system including malfunctions, openings being counted twice and the cap being too large to be used discreetly.

Despite these limitations, researchers have continued to use MEMS, suggesting that it is considered a reasonably reliable tool. We found this method was often used in conjunction with self-report methods.

**Adherence: self-report**

The study conducted by Cook et al (2009) into telephone-based MI relied solely on self-reporting. In context, it is evident that this method was the most practical and cost-effective for the study.

Cook et al (2009) cite evidence from Liu et al (2008) which described self-report as a “relatively accurate” measure of adherence. However, despite this support, it should be acknowledged that this measure depends on the honesty and memory of participants.

**Clinical outcomes**

Blood tests for viral load and CD4 count, a measure of immunological status, provide empirical evidence of viral suppression. The goal of ART is to reduce virus, therefore reducing illness and potential for viral transmission.

Six of the eight studies sought to measure the effect of MI on viral load and CD4 count. Only Parsons et al (2007) found a significant improvement in clinical outcomes but this improvement was found at the three-month follow-up but not continued at six months.

Some studies had problems measuring clinical outcomes regularly due to financial restraints, making it difficult to correlate blood results with MI sessions. Difficulties in measuring laboratory results within the resources and time frame of a research study also hindered the ability to measure clinical outcomes. Parsons et al (2007) said an intense, individually tailored intervention is needed to influence long-term clinical outcomes. This is an important point to consider, as laboratory values provide increased objectivity in measuring intervention effectiveness.

**Sample**

**Attrition rates**

Four of the studies reviewed cited participant attrition rates as a limiting factor. In the study by Samet et al (2005), 24% of the intervention group received only partial or no intervention. Of the participants in Cooperman et al’s (2012) research, 36% completed just one hour or less of counselling. Cook et al (2009) experienced 58% attrition and adjusted for this factor in their analysis.

Maintaining engagement in therapy is also affected by the practical application of interventions in practice settings. As Cooperman et al (2012) noted, poor participation in therapy is common in HIV psychotherapeutic care. Studies have found that around 30% withdraw following the initial session (Bottonari and Stepleman, 2009; Reece, 2003).

However, the constraints of the research trial may also be a cause of high attrition rates (Krummenacher et al, 2011). Krummenacher et al (2011) looked retrospectively at MI interventions in practice settings and found high levels of adherence, with a retention rate of 92%; some of the reduction in sample size was due to successful exit from the programme.

**Ethics of incentives**

Financial incentives in the Diiorio et al (2008) study may have encouraged continued participation. This type of incentive can be an ethical concern and may compromise valid consent, as may involving participants who are patients of the researcher. It may also affect the ability to generalise findings, for example if those with lower incomes are encouraged to participate (Grady, 2005).

However, financial incentives may lead to more participants (Aesch et al, 1998) and reduce attrition. It should also be recognised that non-patient research volunteers are often paid, and compensating participants for their time shows respect (Doody et al, 2003).

Local ethical review committees have an important role in defining how much payment is reasonable (Council for International Organisations of Medical Sciences, 2002).

**Quality of therapy**

Several studies have investigated the optimum criteria for delivering effective MI. Cooperman et al (2012) found that increasing the number of MI sessions improved adherence, adding weight to the argument that intense MI interventions improve clinical outcomes. This study revealed that more intensive interventions, conducted over a longer time period, improved adherence significantly.

Thrasher et al (2006) found adherence was improved by certain interviewer styles such as perception of acceptance and empathy. Open questions encouraging reflection were seen as effective. Discussing medication during the sessions was found to increase adherence, suggesting that maintaining focus on medication is important. This position was corroborated by Parsons et al (2007).

Qualifications of those delivering MI sessions ranged from nurses trained in behavioural counselling to masters-level counsellors. Diiorio et al (2008) specifically trained nurses in MI techniques for the purpose of the research, which could be a possible method for implementing MI in practice.

Thrasher et al (2006) suggest MI may be more effective in practice settings where therapists have more time to establish a relationship with participants and more clinical resources are available. Having a longer time frame may produce better results in terms of adherence and achieving an undetectable viral load.
Conclusion
MI has shown potential for improving adherence to HIV medications. However, limitations of research studies mean it cannot be concluded that MI is effective as a standalone therapy.

Establishing the most effective method for implementing MI is crucial to finding out how effective it is in improving medication adherence. Future research should measure clinical outcomes as well as adherence measures and it would be useful to research long-term effects.

Maximising the quality and quantity of therapy is shown to make treatments more successful and is also more cost effective in terms of resources. Nurses using MI to increase ART adherence should be aware there are limitations in the evidence. It may be best to use MI in combination with other methods such as evaluating regimens, memory aids and social support. Whichever method is chosen, it is vital to establish a trusting relationship and plan holistic support based around individual needs.

We did not find any relevant UK-based research. Nurses working in the UK should consider how differing sociocultural values here and in the US and the different organisation and funding of healthcare services may affect how many our findings can be translated to patients in the UK.

References


Bottonari KA, Stepleman LM (2009) Factors associated with psychotherapy longevity among HIV-positive patients. AIDS Patient Care and STDs; 23: 2, 109-118.


