

**The effectiveness of using motivational interviewing  
with individuals that abuse substances and/or offend.**

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**CLINICAL SCENARIO:**

According to NZ herald (2012) New Zealand has among the highest drug abuse rates in the world. So it is not surprising that the relationship between substance abuse and offending continues to attract the attention of researchers from several disciplines. “Motivational interviewing is a client centered, semi- directive method for enhancing intrinsic motivation to change by exploring and resolving ambivalence” (Smedslund et al., 2010, p.1). Because this intervention is used worldwide, it is important to find out whether it helps, harms, or is even ineffective.

**FOCUSSED CLINICAL QUESTION:**

In people who abuse substances and/or offend, is the use of motivational interviewing (MI) effective to reduce the use of substances?

**SUMMARY OF SEARCH, ‘BEST’ EVIDENCE’ APPRAISED, AND KEY FINDINGS:**

Within the search for relevant studies it was found that no qualitative studies were available, and very few systematic reviews. The majority of studies completed in the area of MI intervention are of quantitative research - randomised control trials. Due to the nature of the focussed clinical question of this appraisal measuring the effectiveness of an intervention, a quantitative research strategy would be most suited; quantitative research

uses outcome measures to measure efficacy of an intervention (Taylor, 2007). A qualitative randomised control trial along with a systematic review was used as 'best evidence' for this appraisal. Both were most suited to the clinical question, and measured the effectiveness of motivational interviewing.

#### **CLINICAL BOTTOM LINE:**

Based on research conducted for this critical appraisal, there is evidence to support that amongst people who abuse substances and/or offend; the use of MI is effective to reduce the use of substances.

#### **LIMITATIONS OF THIS CAT:**

This critical appraisal has been peer reviewed by one lecturer as part of an assignment. For assignment purposes only two articles have been critiqued.

#### **SEARCH STRATEGY:**

Four electronic databases were used to locate relevant studies; Google scholar, PubMed, ScienceDirect, and CINAHL with full text. Search terms used were: "motivational interviewing" AND substance abuse AND drugs. Citation tracking (Taylor, 2007) of reference lists of relevant studies was also used; a database search for the full text was then conducted.

#### **INCLUSION AND EXCLUSION CRITERIA:**

##### **Inclusion Criteria:**

- Studies examining the effectiveness of MI with substance abusers and/or offenders
- Published in English language
- Either quantitative or systematic reviews
- Available in full text
- Research performed within the last 10 years

##### **Exclusion Criteria:**

- Articles located from the COCHRANE database
- Qualitative research
- Articles that required purchasing

## RESULTS OF THE SEARCH:

Study Design/Methodology of Articles Retrieved	Level Based on Taylor, (2007)	Author (Year)
Quantitative - Semi randomised trial	3	Berman, et al. (2010)
Quantitative - Randomised control trial	2	de Dios, et al. (2012)
Systematic Review	1	McMurrin, (2009)
Quantitative - Cluster randomised trial	2	McCambridge & Strang, (2004)
Quantitative - Randomised control trial	2	Walker, et al. (2006)

## BEST EVIDENCE:

The following articles were selected as best evidence and were chosen for critical appraisal.

- McCambridge & Strang (2004): This quantitative study was selected as the aim of this study was to measure the effects of motivational interviewing to decrease drug use; this was best suited to the focussed clinical question. Another point to highlight is the use of randomised trial (RCT) in the title; Lannin & Webster (as cited in Sackett & Wennberg, 1997) state “the RCT is considered the ‘gold standard’ in experimental designs for testing effectiveness of clinical interventions” (p. 248).
- McMurrin (2009): This systemic review article was selected because a quantitative article had already been found and there were no qualitative articles able to be found that supported MI amongst substance abusers and/or offenders. A systematic review has the highest level of research evidence for effectiveness of interventions (Taylor, 2007), so this article was also thought to be of ‘best’ practice.

## SUMMARY OF BEST EVIDENCE:

**Study 1:** McCambridge, J., & Strang, J. (2004). The efficacy of single-session motivational interviewing in reducing drug consumption and perceptions of drug-related

risk and harm among young people: Results from a multi-site cluster randomized trial.  
*Addiction*, 99, 39-52.

**1. Aim/Objective of the Study:**

“To test whether a single session of motivational interviewing (discussing alcohol, tobacco and illicit drug use) would lead successfully to reduction in use of these drugs or in perceptions of drug-related risk and harm among young people” (pp.39).

**Study design:**

Quantitative - Cluster randomised trial.

**Setting:**

Metropolitan community. “Ten further education colleges across inner London” (p.39).

**Participants:**

200 students attending the further education colleges were recruited. Participants were between the age of 16 - 20 years old, and of those just under half were female. Initially 105 participants were recruited to the motivational interviewing (MI) group, and 95 were recruited to an ‘education-as-usual’ control group. 97 of the MI group, and 82 of the control group retained. All characteristics of participants in both groups showed differences non-significant, with the exception to identified ethnic groups, and how often participants in both groups used stimulant drugs (p=0.03).

The sample was purposive to the aim of the study; participants were selected who were currently using illegal drugs (cannabis or stimulant drugs with the exclusion of opiate and injecting drug user) weekly for the previous 3 months. Participants were recruited by trained college peers using a peer interviewing process; peers performed baseline questionnaires, and checked participant eligibility.

**Method:**

Randomisation was performed by a colleague (who was not involved in the study) of the researchers. Following randomisation participants were clustered into the MI and the control ‘education as usual’ group. Intervention was provided by the researchers. A self report assessment was used at recruitment, and repeated 3 months following. MI was used

in the form of a “1-hour single-session face-to-face interview structured by a series of topics” (p.39). Topics included discussion of risks, positives and negatives of drug taking, and exploring values of discontinuing drug use. Researchers aimed to facilitate behavioural change by stimulating new thinking of drug use. Assessment for the control group was performed at baseline and follow up only. The follow up interview was conducted by one of the two researchers. Researchers also obtained at follow up further background data from the participants.

Outcome measures: Drug dependence was measured at baseline with the Severity of Dependence Scale. The Interactional risk assessment was administered to measure drug use problems and harm. Measurement of stages of change was attempted to be measured through the use of self-nomination of stage of change and likert-scaled statements. Attitudes towards participants drug use was measured through a seven-point scale approach, Drug Attitudes Scale, 12-item General Health Questionnaire, and questioning.

**Results:**

At baseline scores for alcohol consumption of weekly drinkers in both groups were similar (43% vs 48%. At the 3 month follow up results showed a significant decrease in the amount of alcohol been drunk by the intervention group (baseline mean of 12.7 units of alcohol per week to a mean of 7.7 units of alcohol,  $p=002$ ); as opposed to the control group increasing (baseline mean of 12.7 to 14.2 alcohol units per week).

At baseline scores of weekly and daily/near daily frequency of cannabis smokers were similar (weekly smokers 35% vs 28%, and daily/near daily smokers 49% vs 48%). At the 3 month follow up a significant decrease of weekly frequency was highlighted in the intervention group (baseline mean of 15.7 times per week to 5.4). In comparison the control group increased in frequency from 13.3 to 16.9.

At the 3 month follow up change in perceptions of drinking and drugs was noted. 23% of the intervention group reported making a decision to decrease or stop drinking, as opposed to 6% of the control group. The intervention group was approximately 6.5 times more likely to have made the decision to decrease or stop drinking at the 3 month follow up (OR-6.4,  $P<0.0001$ ). Both groups reported a decision to decrease or stop the use of

cannabis (75% of the intervention group and 44% of the control). The intervention group was approximately 3.5 times more likely to have made the decision to decrease or stop their cannabis use at the 3 month follow up (OR=3.53, p=0.008). Additionally, 45% of the intervention group reported at the 3 month follow up an intention of discontinuing using cannabis within 12 months, as opposed to the control group of 15%.

Results show that the intervention was significant and not due to chance.

### **Original Authors' Conclusions:**

The authors concluded that a brief session of MI appears to be beneficial to young people using drugs, as well as adults. Secondly, authors concluded that “moderation among ongoing users appears to be a greater source of this benefit rather than quitting altogether” (p. 49). Lastly, authors noted the need for further study to be completed on the long term effects of MI, and more robust evaluation tools to measure throughout a further study.

## **2. Critical appraisal:**

**Validity/trustworthiness of the results:** (Based on the guidelines by Taylor (2007).

Are the results valid?

This cluster randomised trial had a clear focus to test the effects of using a single-session motivational interview to decrease the use of drugs, or the perceptions of risk and harm of drug use. A clear description of the characteristics of both groups of participants is given in a table format. The inclusion and exclusion criterion of participants was clearly stated in text. Intervention and outcome measures were discussed in detail. Tables and charts were used to display outcome scores. Participants were recruited and consent was obtained by Peer interviewers who were trained for the project. Randomisation was non-computerised, however randomisation was completed by a colleague of the researchers (not involved in the study) who randomly allocated clusters. Recruitment resulted in 105 participants in the MI group, and 95 in the control group. At follow up 97 of the MI group and 82 of the control group retained, however participants were accounted for. It is not stated whether the participants were blinded to the study. Ethical issues have been considered and local approval was obtained from a local ethical committee at the institute of Psychiatry/Maudsley Hospital.

What are the results?

The authors have stated possible biases and implications, and included methods taken to overcome these. An overview of the data collection process was given. Data collection methods were based on literature researched by authors. Key findings were displayed in text, tables, and graphs. Results showed significant results towards the intervention group than the control group in the decrease of drug use. Validity and reliability were discussed. Authors provide an overview of possible type 1 and type 2 errors of the outcome measures used. Additionally, authors note limitations of the study and recommendations for further research to be completed; particularly on the long term benefits of MI. A complex discussion is provided by the researchers, this could result in difficulty for the reader to be able to comprehend the researchers' analysis of the study.

**Summary/conclusion:**

For occupational therapists working with substance abuse clients, this study provides evidence to support the use of MI to decrease the use of substances. However, further evidence exploring MI would be required. Authors note the need for further study in this area due to possible biases and limitations within the study; as a result occupational therapists require to be cautious basing their evidence- based practice on this study alone.

**Study 2:** McMurrin, M. (2009). Motivational interviewing with offenders: A systematic review. *Legal and Criminological Psychology, 14*, 83-100.

**1. Aim/Objective of the Systematic Review:**

“Offender motivation is one specific responsivity in offender treatment and motivational interviewing (MI) is commonly used by corrections personnel. Although evidence for the effectiveness of motivational interviewing is accruing overall, a review of MI specifically with offender population is required” (p. 83). The aim was to systematically review the evidence of the impact of MI with offender populations.

**Study design:**

Systematic Review

**Search strategy:**

A computerised literature search of Cochrane Library, Embase, Medline, PsycInfo,

ProQuest (Dissertations and Theses), Sociological Abstracts, National Criminal Justice Reference Service, and Web of Knowledge, for information up to October 2007 was performed.

Key search terms used were related to MI with offenders (motivation; motivational interviewing; motivational enhancement).

“In addition, the bibliography on the motivational interviewing website was accessed ([www.motivationalinterviewing.org](http://www.motivationalinterviewing.org)) and a message was posted on the motivational interviewing trainers’ web page. The US National Institute of Health’s Computer Retrieval of Information on Scientific Projects (CRISP) website was accessed. Information was solicited via an international web-based Forensic Network, and from known researchers in the field. Reference lists from all retrieved studies were examined for further studies” (p.86).

**Setting:**

All studies were conducted in either a prison or outpatient community treatment facility. Twelve of these studies were based in the United States of America, three in Canada, three in the United Kingdom and one in New Zealand.

**Participants:**

Participants were all offenders of some sort, with ten of the studies in relation to substance misusing offenders, three for domestic violence offenders, five for drink drivers, and one for general offenders.

**Method:**

Studies that focused upon other interventions other than MI or MET were excluded. “Both published and unpublished materials were solicited on any offender sample (i.e. any offence type; probationer, prisoner and mentally disordered offender; men and women; juvenile, youth, and adult), working on any problem (e.g. substance use or offending) and measuring any outcome (e.g. treatment engagement, behaviour change, reconviction)” (p.85). All empirical studies met the criteria for inclusion, and were rated for methodological quality on the Maryland Scientific Methods Scale (SMS). This identified

five categories: “(1) correlational studies that report a correlation denoting the strength of the relationship between an intervention and its outcome; (2) before and after studies of a target group only, with no control group; (3) comparison group, where before and after measures are compared for the target group and a comparable control group; (4) controlled trial, where before and after measures are compared for the target group and a comparable control group, as in (3), but potentially confounding variables are controlled; (5) randomized controlled trial, where there is random allocation to target and control groups” (p.85).

**Results:**

Overall, thirteen published studies and six dissertation abstracts were identified. Amongst these studies it showed that MI is best evaluated in substance misuse treatments as they are the most frequently used application with offenders.

The results from this systematic review show that MI among substance misusing offenders, domestic violence offenders, drink drivers and general offending, “is used to enhance retention and engagement in treatment, improve motivation to change, and change behaviour” (p.83).

**Original Authors’ Conclusions:**

Although the results appeared favourable for substance misusing offenders (particularly in regards to enhancing retention and behaviour change), the author recommended further research into MI amongst offenders, in order to find out which specific MI is effective, with whom, and for what purpose.

The author also concluded that “given the success of the MI in other clinical areas, and the promise shown in many of the studies reviewed here, the MI is one intervention that deserves the allocation of sufficient resources to develop its evidence base in offender treatments” (p.97).

**2. Critical appraisal:**

**Validity/trustworthiness of the results:** Based on the guidelines by Taylor (2007).

*Are the results valid?*

This systematic review had a clearly focused issue of reviewing the evidence of the impact of MI with offender populations. It established concise parameters regarding the

intervention being reviewed and included a specific population. Full details of the search strategy were provided, including a range of databases, known researchers in the field, and relevant websites. Keywords used were appropriate to the focus of the review with specific inclusion and exclusion criteria that were rated for methodological quality based on the Maryland Scientific Scale. Both unpublished and published research was solicited and reference lists from all retrieved studies were examined.

*What are the results?*

A meta-analysis was not used; however the overall results of this review adequately addressed its aim to systematically review the evidence of the impact of MI with offender populations. Results were presented in their domains of application (Substance- focused motivational intervention studies and offense- focused motivational intervention studies) and provided narrative summaries which were also summarised in clearly laid out tables displaying each studies:

- Author
- Target population
- Aim
- Intervention
- Sample size
- Outcome measure
- Length of follow up
- Outcome

The conclusions and recommendations were based on the findings of this review, not on the author's own ideas or assumptions.

**Summary/conclusion:**

This systematic review demonstrates a valid and trustworthy method of reviewing the evidence of the impact of MI with offender populations. It holds relevance to occupational therapy as it provides evidence supporting the use of MI in reducing substance abuse amongst offenders. This is a quality piece of research that would be of particular benefit in settings where clients are known to misuse substances and/or offend e.g. mental health and forensic settings, and child youth and family.

### **IMPLICATIONS FOR PRACTICE, EDUCATION and FUTURE RESEARCH**

The studies analyse genders, behaviour change, and drug consumption (including drinking, cannabis, and other stimulant drugs). However the RCT focussed on the drug consumption of young people between the age of 16 – 20, as opposed to the systematic review which varies from juvenile, youth, and adult offenders. Another point to highlight is the variation of settings used within both studies; the RCT was based at an education centre, whereas the systematic review was based at a forensic inpatient and outpatient setting. As a result this is useful to practitioners considering using motivational interviewing to reduce substance use as it demonstrates the ability to use with various ages, and settings.

Based on the critique of the two articles we can conclude that MI is a significant and beneficial intervention for reducing substance abuse in people who misuse substances and/or offend. However, practitioners would be recommended to further research this subject rather than basing their evidence to implement MI with substance abusers on these articles alone.

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