

Should psychosocial intervention be added to pharmacological treatment for opiate abuse/dependence? An overview of systematic reviews of the literature

Laura Amato, Marina Davoli, Silvia Minozzi, Simona Vecchi, Carlo A. Perucci

Dipartimento di Epidemiologia, ASL RM E, Roma, Italia

Correspondence to: Laura Amato, Dipartimento di Epidemiologia ASL RM E, Via S. Costanza 53, 00198 Roma, Italia. Email: amato@asplazio.it

Abstract

Background: Opioid abuse and dependence are major health and social issues in most societies. Different interventions are available, but the majority of heroin patients relapse and these relapses are a substantial problem to their rehabilitation. Psychosocial interventions for drug addicts have been suggested as possible instruments to overcome the difficulty of maintaining a drug-free state. The aim of this paper is to provide a summary of the available evidence of effectiveness.

Methods: We summarised the results from two systematic reviews on psychosocial interventions combined with Methadone Maintenance Treatment and Methadone or Buprenorphine Detoxification Treatment. **Results:** For detoxification treatments, the results show that benefits can be gained from adding any psychosocial treatment to any substitution detoxification treatment in terms of completion of treatment: relative risk (RR) 1.68 (95% CI 1.11-2.55), and compliance (proportion of clinical absences): RR 0.48 (95% CI 0.38-0.59); for the use of heroin during treatment, the differences were not statistically significant. For maintenance treatments, there is an additional benefit to be gained in adding any psychosocial treatment to methadone maintenance treatment in relation to the use of heroin during treatment: RR 0.69 (95% CI 0.53-0.91); no statistically significant additional benefit was shown in terms of treatment retention and results at follow-up.

Conclusions: Psychosocial treatments offered in addition to pharmacological detoxification treatments are effective in terms of completion of treatment and compliance, while adding any psychosocial support to methadone maintenance significantly improves the non-use of heroin during treatment but does not improve the other outcomes considered.

Key words: opioid-related disorders, methadone, buprenorphine, systematic review

Introduction

Abuse and dependence on opioid drugs are major health and social issues in most societies. Different interventions to deal with problems related to opiate dependence are available.

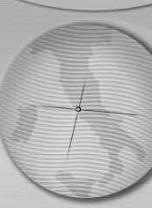
Data from the literature and clinical experience, suggest that different pharmacological approaches aimed at detoxification are effective in the short term [1]; the effectiveness of methadone treatment targeting maintenance is well recognized [2]. Detoxification treatments may attenuate the withdrawal symptoms until the achievement of a drug free state and maintenance treatments, for those who are not yet able to achieve a drug free state, may be able to help reduce the risks associated with the use of street drugs.

Nevertheless a majority of patients relapse back into heroin use, and relapse from the drug-free state to re-addiction is a substantial problem in the rehabilitation of dependent heroin users. It is becoming increasingly apparent that the difficulty for drug addicts in maintaining a drug-free state makes the psychological process underlying

addiction particularly important in developing treatments [3,4].

The continued use of illicit substance reflects the drug addict's continuing inability to cope with stress. In this category of patients, the process of creating an effective state elaboration is often delegated to an external factor such as a substance mood modifier. The substance abuse is reinforced by the positive expectation of the drug's effectiveness in reducing the stress caused by the deficiencies in coping with situational demands [5].

Some trials suggest that the provision of psychosocial support along with pharmacological detoxification therapy may enhance the success of the interventions [6,7]; improvements in the methadone withdrawal response may be achieved through the provision of more information, counselling and other supporting services. Indeed these other services, by encouraging realistic expectations and setting short-term goals, might be as important as the pharmacological therapy in determining treatment outcomes. In respect to maintenance treatments, perhaps the only



component of treatment that has been conclusively evaluated is the dose level of the methadone used for maintenance interventions [8]. While the dose of methadone is clearly an "active ingredient" in the methadone maintenance treatment, questions remain regarding the efficacy and value of the support services that are commonly offered by most maintenance programs and by all other forms of substance abuse treatment such as psychiatric care, psychotherapies, drug abuse counselling, urine monitoring, and input from social workers.

Psychosocial treatments for opioid dependence are a critical component of the overall treatment package and requires evaluation as a stand-alone intervention as well as combination with pharmacotherapy.

This overview examined the results of two Cochrane reviews [1,2] focusing on psychosocial treatments delivered in association with pharmacological treatments for opioid dependence, in order to explore if psychosocial treatments contribute to the achievement of the expected outcomes, rather than ranking the different treatments.

Details of the methods and results of the two reviews are available in the Cochrane Library [9].

Methods

This overview summarises the major findings of two Cochrane reviews examining the role of psychosocial interventions for opioid dependence [1,2]. One review assesses psychosocial interventions for opioid dependence [2] while the other focuses on psychosocial interventions for opioid detoxification [1].

Twenty individual studies were included in the two reviews, with a total of 1404 participants (range 27-119); all of the studies included were RCTs, quality was judged on the basis of allocation concealment: no study reported adequate methods for allocation concealment, 15% reported inadequate methods and in 85% of the studies methods of allocation concealment were not reported at all. Information on the length of the treatments was available in for all of the studies; The countries where the original studies were conducted were: USA (19 studies) and United Kingdom (1 study).

In the 20 studies included in the two reviews the following treatments were considered: 5 different psychosocial interventions (Behavioural, Psychoanalytic Oriented, Structured Counselling, Short Term Interpersonal Psychotherapy and Family Therapy) and three pharmacological treatments: Methadone Detoxification Treatment (MDT), seven

studies, with a mean starting dose of 44.5 mg (range 30 to 76.4), Buprenorphine Detoxification Treatment (BDT), one study, with a dose range of 2 to 8 mg/day and Methadone Maintenance Treatments, 12 studies, with a mean dose of 50.7 mg/day.

The comparisons considered in this overview are:

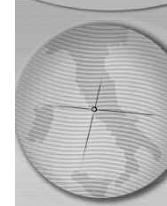
- Any psychosocial intervention plus any pharmacological detoxification intervention versus any pharmacological intervention alone: 8 studies, 423 participants. [10-17]
- Any psychosocial intervention plus Methadone Maintenance Treatment (MMT) versus MMT: 12 studies, 981 participants. [18-29]
- Any behavioural intervention plus MDT (Methadone Detoxification Intervention) versus MDT alone: 5 studies, [11-14,16] 215 participants.
- Any behavioural intervention plus MMT versus Standard MMT : 8 studies, [18-24,26,28] 645 participants.
- Any psychoanalytic oriented interventions plus MMT versus Standard MMT, 3 studies, [27-29] 211 participants.

One study [29] had three treatment arms, comparing MMT with a psychoanalytic oriented intervention in arm 1 and a behavioural intervention in arm 2.

The results of comparisons considered in single studies only (Behavioural Treatment plus Buprenorphine Detoxification Treatment (BDT) versus BDT alone, 1 study [10], 39 participants; Short term Interpersonal Therapy plus MMT versus Standard MMT: 1 study [25], 72 participants, Enhanced Methadone Services plus MMT versus Standard MMT versus only MMT: 1 study [22], 92 participants, Family Therapy plus MDT versus MDT alone versus Low Contact: 1 study [17], 119 participants and Psychotherapeutic Counselling plus MDT versus MDT alone: 1 study [15], 50 participants) are synthesized in the comparisons of any psychosocial intervention plus any pharmacological versus pharmacological alone and not referred one by one in order to improve the synthesis and the readability of the paper.

The outcomes considered in the reviews were: Retention in treatment, Use of opioid during the treatment; Results at follow-up; Compliance; Use of other drugs and Mortality.

Regarding the use of heroin and other substances during treatment, this overview reports the results based on the number of participants with opiate positive urinalysis during the treatment. Statistical analysis: dichotomous outcomes (retention in treatment, number of subjects with positive urinalysis) were analysed calculating relative risk (RR), and 95 percent confidence intervals. The RR from the individual



trials were combined through meta-analysis where possible (comparability of intervention between trials) using a fixed effect model. Heterogeneity of the results was examined by performing a test for of heterogeneity.

Results

Results are presented by outcome and treatment comparison.

Retention in treatment

The association of any psychosocial intervention to pharmacological treatments aimed at detoxification is more effective than pharmacological treatment alone in increasing the

proportion of patients that completed the detoxification treatment (5 studies, 184 participants): RR 1.68 (CI 95% 1.11 to 2.55) (Figure 1). After performing a sensitivity analysis, excluding the study with inadequate allocation concealment, the result did not change, remaining significantly in favour of the associated treatments RR 2.17 (CI 95% 1.26 to 3.72); this efficacy is again confirmed when the association behavioural interventions plus MDT with MDT alone (2 studies, 47 participants) RR 2.28 (95% CI 1.09 to 4.75) is considered.

Adding psychosocial interventions to maintenance pharmacological treatments does not improve the retention of treatment (8 studies, 510 participants): RR 0.94 (CI 95% 0.85 - 1.02) (Figure 2)

Figure 1. Completion of treatment

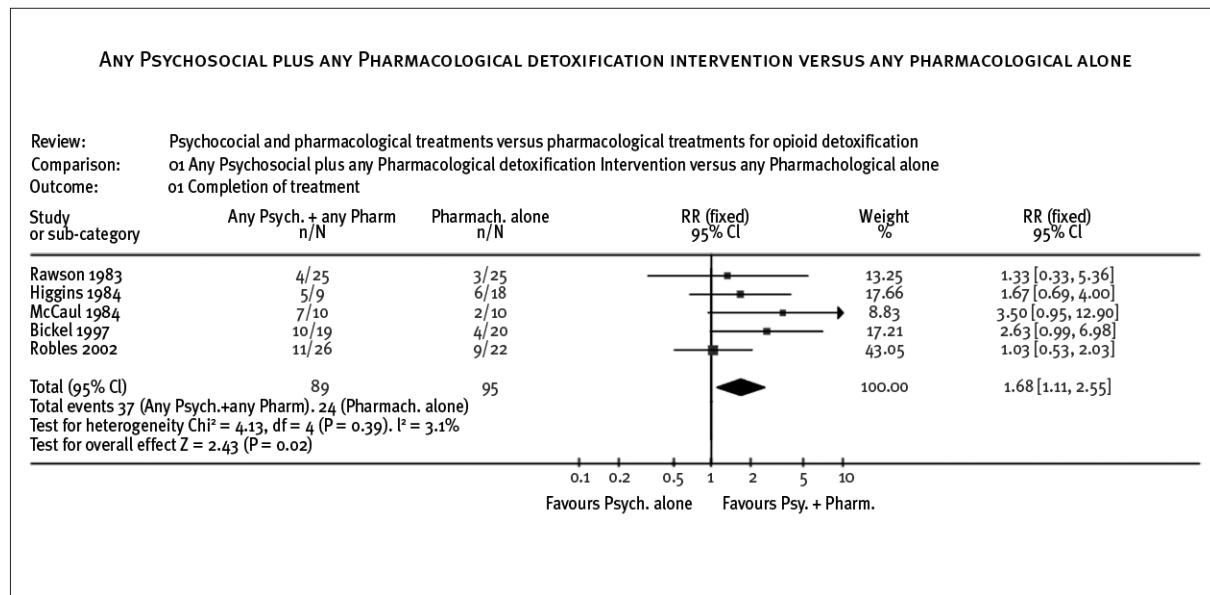
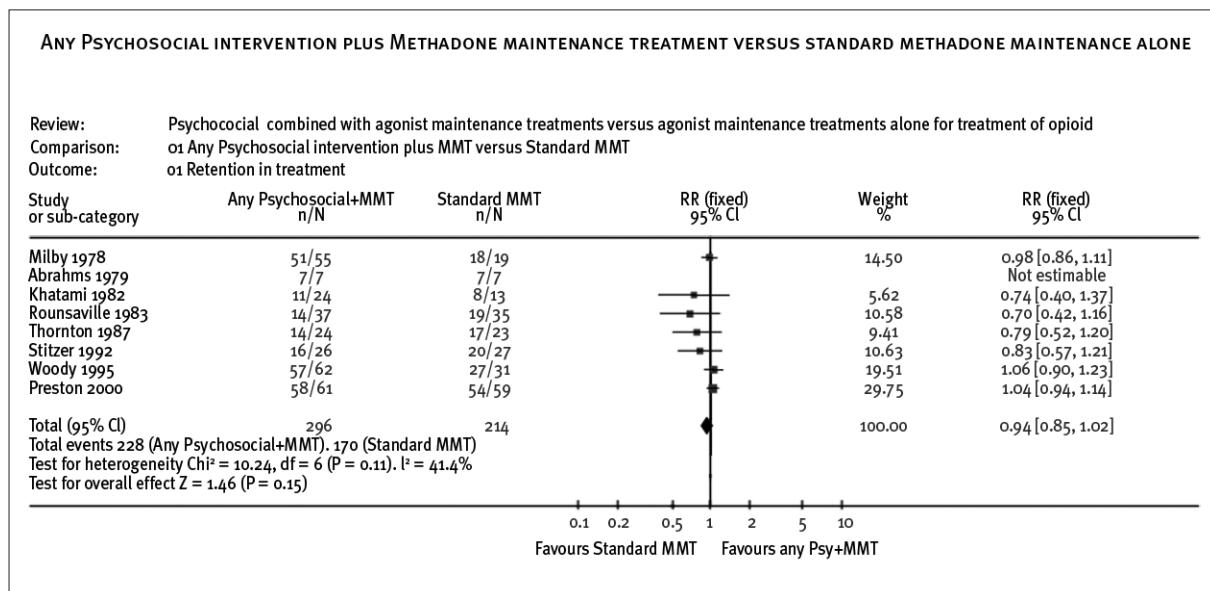


Figure 2. Retention in treatment



and the result remains not statistically significant when the behavioural interventions plus MMT versus Standard MMT (5 studies, 298 participants): RR 0.96 (95% CI 0.87 to 1.06), and the psychoanalytic oriented interventions plus MMT versus Standard MMT (2 studies, 140 participants) RR 0.97 (95% CI 0.82 to 1.14) are considered separately.

Use of heroin during treatment

The data showed a reduction in the use of heroin when any psychosocial intervention plus any pharmacological intervention, aimed at detoxification, was compared to any pharmacological intervention alone (3 studies, 109 participants), however the difference was not statistically significant RR 0.77 (CI 95% 0.59 to 1.01) (Figure 3). In the single comparison, behavioural intervention plus MDT versus MDT

alone, the difference became statistically significant in favour of the associated treatment (1 study 20 participants), with 5/10 participants in the associated treatment group having opiate positive urine samples compared to 10/10 in the methadone alone group (RR 0.50 CI 95% 0.27 to 0.93).

The association of any psychosocial intervention plus MMT proved to be more effective in reducing heroin use than standard MMT (5 studies, 388 participants) RR 0.69 (CI 95% 0.53 - 0.91) (Figure 4), this difference became non significant when psychoanalytic oriented interventions plus MMT were compared to Standard MMT (2 studies, 127 participants) RR 0.83 (CI 95% 0.47 - 1.45)

Results at follow-up

The outcome is reported as the proportion of participants abstinent at the end of follow-up.

Figure 3. Use of heroin during the treatment

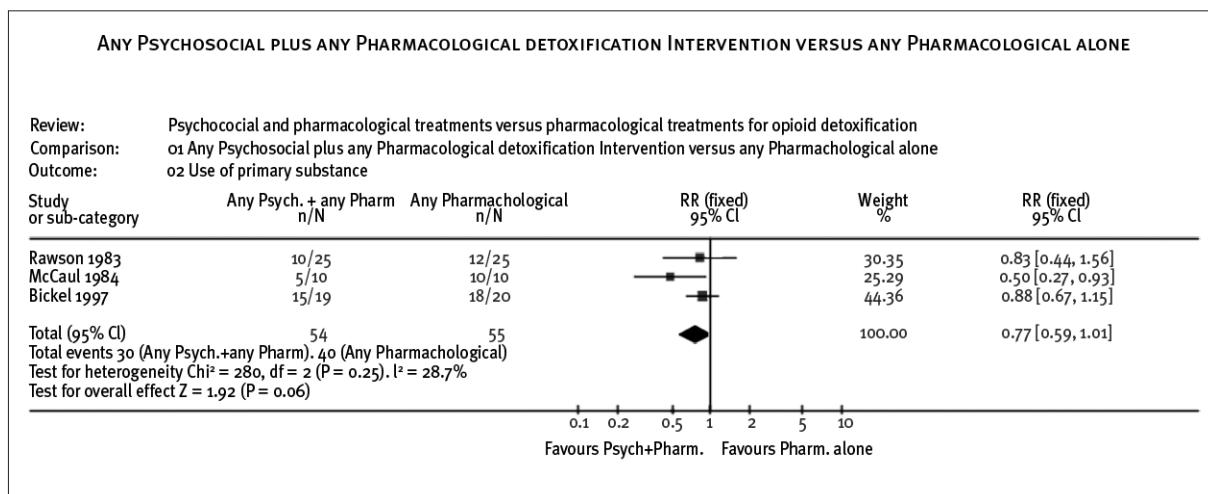
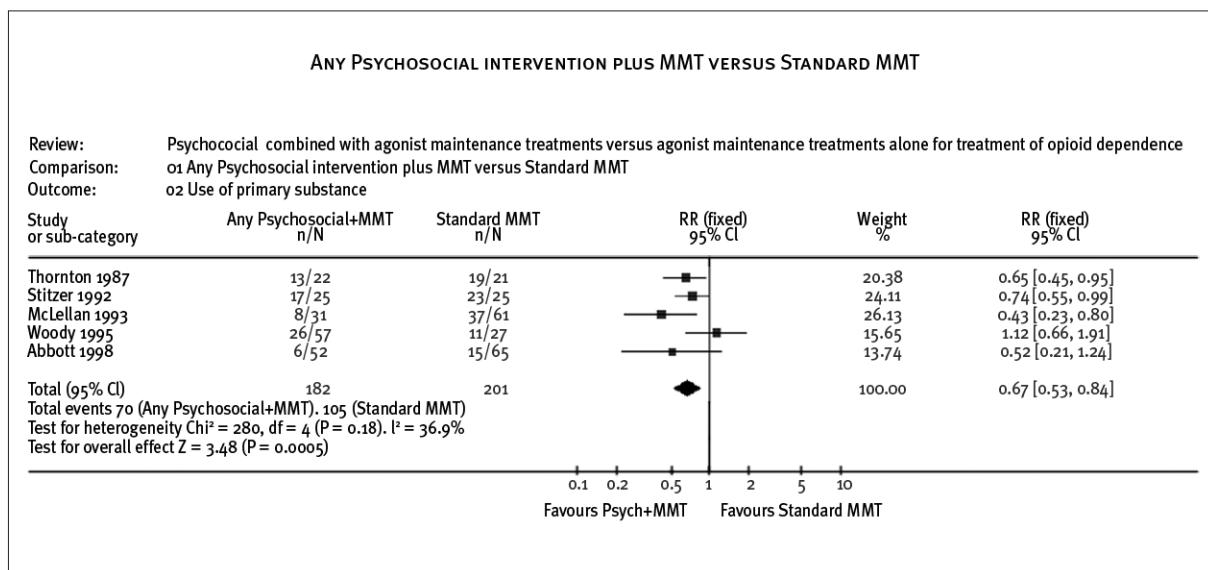
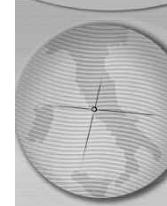


Figure 4. Use of heroin during the treatment





The proportion of abstinent participants is significantly higher in the group of patients assigned to psychosocial plus any pharmacological treatment compared to pharmacological interventions alone, (3 studies, 208 participants) RR 2.43 (CI 95% 1.61 to 3.66), but when a sensitivity analysis excluding the study with inadequate allocation concealment from meta-analysis was performed the result was no longer statistically significant (2 studies, 89 participants) RR 2.03 (CI 95% 0.84 to 4.92).

No difference was found when any psychosocial plus MMT was compared to standard MMT (2 studies, 108 participants) RR 0.88 (CI 95% 0.67 - 1.15). The difference remains not significant for all of the other comparisons.

Compliance

Compliance was measured as Clinic Absence; psychosocial interventions plus MDT compared to MDT alone was found to be more effective (RR 0.48 CI 95% 0.38 to 0.59), this result is also confirmed by the single comparisons.

Discussion

Psychosocial treatments offered in addition to pharmacological detoxification treatments are effective in terms of completion of treatment and compliance; a weak effect was also observed for the proportion of patients at follow-up after 1 year; psychosocial treatments offered in addition to pharmacological maintenance treatments show additional benefit only in reducing the use of heroin. No significant differences were observed for the other outcomes considered in the included studies for both detoxification and maintenance.

For the maintenance treatments, it should be noted that the control intervention used in the studies included in the review, is a program that routinely offers counselling sessions in addition to methadone; thus the review, actually, did not evaluate the question of whether any ancillary psychosocial intervention is needed when methadone maintenance is provided, but the narrower question of whether a specific more structured intervention provides any additional benefit to standard psychosocial support. These interventions probably can be measured and evaluated by employing diverse criteria for evaluating treatment outcomes, aimed to rigorously assess changes in emotional, interpersonal, vocational and physical health areas of life functioning.

It is also worth mentioning that, like other patients who have been treated with some kind of psychotherapy, opiate addicts have significant

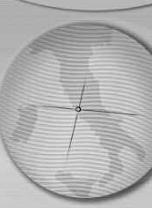
psychiatric problems especially in the areas of depression and anxiety. To the extent that drug use is an attempt to self-medicate for these problems and to the degree that psychosocial intervention, especially psychotherapy, can reduce them, psychotherapy can, perhaps, reduce drug use indirectly in these people. Nevertheless to evaluate these effects it is necessary to observe these patients for long periods and to develop methods for standard assessments of specific outcomes.

Ultimately, the results of the present overview on maintenance treatments together with the available evidence of effective methadone maintenance treatment [8,30] clearly show that provision of standard methadone maintenance treatment should not be abandoned if the available resources do not allow the addition of ancillary psychosocial treatment.

Results of the review on detoxification treatment shows more benefits of adding psychosocial interventions to the one those that are pharmacological. This may be due to the robust effects of the methadone maintenance treatment itself, as compared to detoxification treatment and possibly to the fact that additional counselling is usually offered along with methadone maintenance but not with detoxification. Another possible explanation is that participants in detoxification are less stable - it is usually a personal crisis that brings them into detoxification - and they have more psychological issues that need to be dealt with. If psychosocial interventions delivered in association with detoxification helps them to deal with these issues, then it seems reasonable to expect that the provision of associated psychosocial interventions might improve the outcomes of detoxification.

In fact, there is no evidence that detoxification can substitute for long term treatment in the management of opiate addiction. Research suggests that relapse to opiate use is not entirely determined by avoidance of, or escape from withdrawal symptoms. Therefore a treatment that exclusively attenuates the severity of opiate withdrawal symptoms can be at best partially effective. Many if not most of the physiological, behavioural and social conditions prevailing during an individual's life as an opiate addict will still be present when the physical dependence has been eliminated.

Furthermore, once methadone has been removed, opiates will likely recover the reinforcing properties that previously sustained self administration and it is under those conditions that relapse are likely to occur. Only two high quality studies consider the effect of psychosocial support on reducing relapse to follow-up, and they do not



show additional benefit. Yet, outpatient opiate detoxification is a quick, inexpensive and common procedure that helps individuals by ameliorating withdrawal symptoms, and by temporarily reducing health risk associated with drugs. In addition, detoxification constitutes the first contact that many addicts have with the various treatment services available, and may facilitate transition into long term care. Given that methadone detoxification is such a widely used procedure, it would appear reasonable to attempt to develop more effective detoxification techniques and the addition of psychosocial interventions appears to improve its outcomes.

Finally these reviews show that psychosocial interventions can be evaluated in the context of randomised controlled trials, even though the quality of these studies is poor.

In conclusion, our findings suggest that while no major efforts should be put in adding more intense psychological support to standard high quality methadone maintenance programmes, its addition may be appropriate when considering offering detoxification treatments.

References

- 1) Amato L, Minozzi S, Davoli M, Ferri M, Vecchi S, Mayet S. Psychosocial and pharmacological treatments versus pharmacological treatments for opioid detoxification (Cochrane Review). In: The Cochrane Database of Systematic Review, Issue 1, 2006. Chichester, UK: John Wiley & Sons Ltd.
- 2) Amato L, Minozzi S, Davoli M, Vecchi S, Ferri M, Mayet S. Psychosocial combined with agonist maintenance treatments versus agonist maintenance treatments alone for treatment of opioid dependence (Cochrane Review). In: The Cochrane Database of Systematic Review, Issue 1, 2006. Chichester, UK: John Wiley & Sons Ltd.
- 3) Farrell M, Ward J, Mattick R, Hall W, Stimson GV, des Jarlais D et al. Methadone maintenance treatment in opiate dependence: a review. *BMJ* 1994;309:997-1001.
- 4) Phillips GT, Gossop M, Bradley B. The influence of psychological factors on the opiate withdrawal syndrome. *Br J Psychiatry* 1986;149:235-8.
- 5) Castellani B, Wedgeworth R, Wootton E. A bidirectional theory of addiction: examining coping and the factors related to substance relapse. *Addiction Behaviours* 1997;22(1):139-44.
- 6) Hall SM, Bass A, Hargreaves WA, Loeb P. Contingency management and information feedback in outpatient heroin detoxification. *Behaviour Therapy* 1979;10:443-51.
- 7) Rawson RA, Mann AJ, Tennant FS Jr, Clabough D. Efficacy of psychotherapeutic counselling during 21-day ambulatory heroin detoxification. *NIDA Research Monograph* 1983;43:310-4.
- 8) Faggiano F, Vigna-Taglianti F, Versino E, Lemma P. Methadone maintenance at different dosages for opioid dependence (Cochrane Review). In: The Cochrane Database of Systematic Review, Issue 1, 2006. Chichester, UK: John Wiley & Sons Ltd.
- 9) The Cochrane Library http://www.mrw.interscience.wiley.com/cochrane/cochrane_clsysrev_articles_fs.html.
- 10) Bickel WK, Amass L, Higgins ST, Badger GJ, Esch RA. Effects of adding behavioral treatment to opioid detoxification with buprenorphine. *J Consult Clin Psychol* 1997;65(5):803-10.
- 11) Hall SM, Bass A, Hargreaves WA, Loeb P. Contingency management and information feedback in outpatient heroin detoxification. *Behaviour Therapy* 1979;10:443-51.
- 12) Higgins ST, Stitzer ML, Bigelow GE, Liebson IA. Contingent Methadone dose increases as a method for reducing illicit opiate use in detoxification patients. *NIDA Research Monograph* 1984;55:178-83.
- 13) Higgins ST, Stitzer ML, Bigelow GE, Liebson IA. Contingent methadone delivery: effects on illicit opiate use. *Drug and Alcohol Dependence* 1986;17:311-22.
- 14) McCaul ME, Stitzer ML, Bigelow GE, Liebson IA. Contingency management interventions: effects on treatment outcome during methadone detoxification. *J Applied Behaviour Analysis* 1984;17(1):35-43.
- 15) Rawson RA, Mann AJ, Tennant FS Jr, Clabough D. Efficacy of psychotherapeutic counseling during 21-day ambulatory heroin detoxification. *NIDA Research Monograph* 1983;43:310-4.
- 16) Robles E, Stitzer M, Strain EC, Bigelow GE, Silverman K. Voucher-based reinforcement of opiate abstinence during methadone detoxification. *Drug Alcohol Depend* 2002;65:179-89.
- 17) Yandoli D, Eisler I, Robbins C, Mulready G, Dare C. A comparative study of family therapy in the treatment of opiate users in a London drug clinic. *The Association for Family Therapy and Systemic Practice* 2002;24:402-22.
- 18) Abbott PJ, Weller SB, Delaney HD, Moore BA. Community reinforcement approach in the treatment of opiate addicts. *Am J Drug Alcohol Abuse* 1998;24(1):17-30.
- 19) Abrahms JL. A Cognitive-behavioural versus nondirective group treatment program for opioid addicted persons: an adjunct to methadone maintenance. *Int J Addict* 1979;14(4):503-11.
- 20) Iguchi MY, Belding MA, Morral AR, Lamb RJ, Husband SD. Reinforcing operant other than abstinence in drug abuse treatment: an effective alternative for reducing drug use. *J Consult Clin Psychol* 1997;65(3):421-8.
- 21) Khatami M, Woody G, O' Brien C, Mintz J. Biofeedback treatment of narcotic addiction: a double blind study. *Drug Alcohol Depend* 1982;9:111-7.
- 22) Mc Lellan AT, Arndt IO, Metzger DS, Woody GE, O' Brien CP. The effects of psychosocial services in substance abuse treatment. *JAMA* 1993;269(15):1953-9.
- 23) Milby JB, Garrett C, English C, Fritsch O, Clarke C. Take-home methadone: contingency effects on drug-seeking and productivity of narcotic addicts. *Addictive Behaviours* 1978;3:215-30.
- 24) Preston KL, Umbricht A, Epstein DH. Methadone dose increase and abstinence reinforcement for treatment of continued heroin use during methadone maintenance. *Arch Gen Psychiatry* 2000;57(4):395-404.
- 25) Rounsvale BJ, Glazer W, Wilber CH, Weissman MM, Kleber HD. Short-term interpersonal psychotherapy in methadone-maintained opiate addicts. *Arch Gen Psychiatry* 1983;40(6):629-36.
- 26) Stitzer ML, Iguchi MY, Felch IJ. Contingent take-home incentive: effects on drug use of methadone maintenance patients. *J Consult Clin Psychology* 1992;60(6):927-34.
- 27) Thornton PI, Igleheart HC, Silverman LH. Subliminal stimulation of symbiotic fantasies as an aid in the treatment of drug abusers. *Int J Addictions* 1987;22(8):751-65.
- 28) Woody GE, Luborsky L, McLellan AT, O' Brien CP, Beck AT, Blaine J et al. Psychotherapy for opiate addicts. Does it help? *Arch Gen Psychiatry* 1983;40(6):639-45.
- 29) Woody GE, McLellan AT, Luborsky L, O' Brien CP. Psychotherapy in community methadone programs: a validation study. *Am J Psychiatry* 1995;152(9):1302-8.
- 30) Mattick RP, Breen C, Kimber J, Davoli M. Methadone maintenance versus no opioid replacement therapy for opioid dependence. (Cochrane Review). In: The Database of Systematic Reviews, Issue 3, 2006.