Withdrawal from methadone maintenance treatment: prognosis and participant perspectives

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Abstract

Objective: To determine the proportion of clients engaged in methadone maintenance treatment who have favourable prognosis for withdrawal, and to examine client perceptions and expectations of withdrawal.

Methods: A broad cross-section of 856 methadone clients was sampled across Melbourne, Sydney and Brisbane. Self-complete surveys were developed for the clients, their clinic staff or pharmacists, and methadone prescribers. The client survey examined aspects of the clients' perspectives of withdrawal, and the surveys for the service providers collected information about each client's current treatment episode. Informed consent was provided by clients to obtain information from their clinic staff member or pharmacist, and their methadone prescriber.

Results: Most clients (70%) were at least very interested in methadone withdrawal. Clients were also more optimistic about their own post-withdrawal outcomes (in terms of opioid use) than both their clinic staff and prescribing doctors. Clinical criteria indicated that 31% of clients had a reasonable prognosis for withdrawal. However, when considering all factors, 17% had good withdrawal prognosis, were interested in methadone withdrawal, and believed it was very likely they would remain opioid-free for three months post-withdrawal.

Conclusions: Despite the likely continued increase in client numbers in substitution maintenance treatment, the majority of methadone clients have a poor prognosis for withdrawal and should not be encouraged to cease treatment.

Implications: Clients who do not meet key clinical criteria are likely to have poor clinical outcomes regardless of how withdrawal is attempted.

(*Aust N Z J Public Health* 2001; 25: 121-5)

The number of clients enrolled in methadone maintenance treatment (MMT) has progressively increased in Australia and other countries in the past decade. In Australia, the numbers enrolled in methadone programs have increased from 3,000 in the mid-1980s to more than 25,000.[1]

A difficulty confronting methadone programs is the capacity for the ongoing expansion of treatment places within the context of finite resources. Demand for methadone treatment continues to outstrip the supply of services, with reduced access to treatment and less intensive treatment services as a potential consequence.

One possible mechanism to address this problem is to encourage withdrawal from MMT. Hence, a better understanding regarding successful withdrawal from methadone treatment is required, in particular, the perceptions and expectations of methadone clients and their treating clinicians. There has been no previous Australian research that has examined client and clinician perspectives of methadone withdrawal, although withdrawal has been identified by methadone clients in Melbourne as the major problem with methadone treatment.[2]

Overseas research suggests that withdrawal outcomes are generally poor, as evidenced by low rates of successful completion of the withdrawal regime and high rates of relapse to heroin use.[3-7] Furthermore, the evidence regarding abstinence rates post withdrawal suggests that only approximately one quarter of clients remain abstinent from heroin use for an extended period of time (e.g. three months or more).[3]

If we are to encourage clients to withdraw from MMT it is important to direct our interventions to those clients who could be considered as having a better prognosis for successful withdrawal. It is possible to identify better withdrawal outcomes in certain client groups from the literature. Milby reviewed American studies from 1970 to 1985

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Paper submitted: May 2000
Revision requested: November 2000
Accepted: January 2001

that reported completion rates for clients withdrawing from MMT.[3] Completion rates were considerably higher when withdrawal was undertaken with the consent of treating staff (50%) than when reductions were not approved by staff (19%). It is difficult to operationalise the term 'staff consent', but in general this term relates to agreement by the staff and client that an attempt at methadone withdrawal is warranted, given that the client has ceased their use of heroin and other drugs, has a stable psychological profile and a reasonable level of social functioning (such as employed, with non drug using supports). Withdrawal outcomes are also optimised following long-term maintenance[8] and for clients with positive beliefs about their withdrawal outcomes.[9] Conversely, clients with certain clinical conditions can be considered as poor candidates for withdrawal from methadone, such as being pregnant, those with concomitant chronic pain conditions and other conditions that benefit from continued maintenance treatment with opioids, and those with serious medical or psychiatric conditions (such as schizophrenia).

This study aimed to determine the proportion of clients in MMT in Australia who have favourable prognosis for withdrawal without relapse to heroin or other dependent drug use, or deterioration in their medical, psychiatric or social well-being. The study also aimed to examine client perceptions and expectations of withdrawal by assessing the level of interest among clients in withdrawing from methadone, and the likely outcomes of attempts at methadone withdrawal as perceived by clients and their treating clinicians.

Methods

Sampling technique

A broad cross-section of MMT clients across three Australian States was sampled. There were differences in the sampling techniques for each State, reflecting different treatment systems. The majority of methadone clients in New South Wales and Queensland are treated in large clinic settings, facilitating the recruitment of large numbers of survey participants in a short period of time. The clinics chosen were the Peel Street Clinic and Southside Clinic in Queensland, and the Langton Centre, Towers and Coopers clinics in New South Wales. In Victoria, the vast majority of clients receive their methadone through community pharmacies.[2] Clients in Victoria were recruited through 24 selected pharmacies in metropolitan Melbourne.

All clients in participating community pharmacies (Victoria) and clinics (New South Wales and Queensland) were approached. The response rates for each State were: 224 of 611 (37%) in Victoria; 237 of 513 (46%) in New South Wales; and 395 of 1064 (37%) in Queensland. This reflects an overall response rate of 39%.

The research team developed surveys for methadone clients, clinic staff and pharmacists, and prescribing doctors. All surveys were designed to be self-completed. It was a priority to match each client's record with information from their clinic staff member and doctor. It was therefore necessary to obtain informed consent from the clients to contact their service providers, with assurances that the information they had provided would not be available to their clinic staff or doctor.

Operational criteria for positive withdrawal prognosis

The research team identified and operationalised a number of clinical criteria upon which to assess a client's suitability for attempting withdrawal from methadone. These criteria were developed from previous research literature regarding methadone withdrawal outcomes and through consensus among experienced clinicians on the research team (see Table 1). On the basis of the client, clinic staff, and prescriber data, clients who were both suitable for and interested in methadone withdrawal were identified.

Table 1: Operational criteria used to determine positive withdrawal prognosis.

Criteria	How measured	Rationale
No regular use of heroin	Use of heroin less than once a week in the preceding three months: Urine drug screen and self-report	High risk of relapse to regular heroin use during or following methadone withdrawal
No regular use or abuse of other substances such as alcohol, benzodiazepines or psychostimulants	No dependence to other drugs (in particular alcohol or benzodiazepines): DSM-IV criteria	High risk of increased use of other drugs during or following methadone withdrawal
No significant psychosocial dysfunction	Stable accommodation, employment, supportive networks: Global Assessment of Functioning Score (GAF) >60 [14]	Clients experiencing significant social dysfunction are unlikely to cope with the additional strain of methadone withdrawal
No significant medical or psychiatric condition that either necessitates continuation on an opioid, or complicates withdrawal from methadone	Medical or psychiatric condition that may be destabilised by their termination of methadone treatment (such as chronic pain, schizophrenia, bipolar affective disorder): Clinical history and examination	Risk to the client of deterioration in physical and/or mental health following withdrawal from methadone
Not pregnant or breastfeeding	Clinical history and examination	Physical and psychological risks to the mother and foetus of withdrawal during pregnancy
Client in MMT for more than six months	Confirmation of treatment records	Client outcomes are enhanced where methadone treatment >6 months

Results

The number of client surveys returned was 856. Complete clinic staff and doctor surveys were received for 547 (64%) of the clients surveyed. Analyses were conducted to examine if there were differences between clients with complete doctor and clinic staff data compared with the total client sample (t-tests and chi-square analyses). There were no significant differences in client gender, age, nor level of interest in withdrawal between these groups. All subsequent results will focus on the complete dataset; that is, the 547 clients for whom complete client, clinic staff, and doctor datasets were obtained.

There was a significant difference in the age of the clients from New South Wales (mean = 33.19 years ±7.51), Queensland (mean = 35.77 years ±7.22), and Victoria (mean = 36.86 years ±8.06) ($F_{2,530}$ = 8.99, p<0.001). Post-hoc tests indicated that clients in New South Wales were younger than clients in Queensland and Victoria (p<0.05). The slight majority of clients were male (56.8%), and there were no differences in the proportion of males and females across the three states ($\chi^2(2) = 3.19$, p>0.05).

The mean current methadone dose was 60.0 mg (±31.0), and clients had been in their current MMT for an average of 32.8 months (±35.4). The mean GAF score was 73.3 (±13.3), indicating a reasonably high level of psychosocial functioning. The majority of clients (85.1%) were also eligible for take away doses in accordance with the criteria used in each State. Under half of the clients (42.6%) were judged by their doctors not to be engaging in any parenteral opioid use, and only 15.9% were thought to do so more than once a week. Significant proportions of clients were currently experiencing a severe medical or psychiatric condition (15.7%) or were dependent upon other substances (20.9%). Fewer clients experienced chronic pain (8.2%) or were pregnant or lactating (2.3%).

Client interest in withdrawal

The clients were asked *How interested are you currently in withdrawing from methadone?* The client interest in methadone withdrawal was very high, with 70% of clients in the survey indicating very high or extreme interest in withdrawing from methadone (see Table 2).

Perceived withdrawal outcomes

Clients were asked to rate on a Likert scale *How likely is it that you could stay off heroin and methadone for three months if you withdrew from methadone?* Their clinic staff and prescribing doctors were also asked to rate *How likely is it that this client could stay off heroin and methadone for three months if he/she withdrew from methadone?* The distribution of responses is presented in Table 3.

Table 2: Client interest in methadone withdrawal (n=547).

Level of interest	Number	Per cent
Not at all interested	56	10.2
Slightly interested	38	7.0
Moderately interested	68	12.4
Very interested	115	21.0
Extremely interested	270	49.4

Table 3: Client, clinic staff and doctor ratings of the likelihood of clients remaining opioid free for three months after methadone withdrawal (n=547). Data are presented as percentages.

Likelihood of remaining opioid free	Client ratings	Clinic staff ratings	Doctor ratings
Not at all likely	12.4	21.3	23.7
Unlikely but possible	17.0	38.1	31.6
Moderately likely	19.4	23.7	25.2
Considerably likely	24.0	13.3	16.1
Extremely likely	27.2	3.6	3.4

Approximately half (51.2%) the clients surveyed across the three States indicated that it was at least considerably likely that they would be able to remain opiate free for three months after methadone withdrawal. The distribution of service provider responses is quite different from the client ratings. Clinic staff and doctors indicated that only 16.9% and 19.5% of clients respectively would be considerably or extremely likely to stay off opiates for three months. The more optimistic ratings by the clients was highlighted by analysis using the Kendall Coefficient of Concordance,[10] which confirmed that there was not significant agreement between the three groups of ratings ($\chi^2(2) = 214.19$, p<0.001). This high level of client optimism is consistent with the extremely high levels of client interest in withdrawal.

Proportion of clients with good withdrawal prognosis

An estimate of the proportion of clients that would be clinically suitable for methadone withdrawal was made in accordance with the criteria established in Table 1. A total of 171 clients from the total of 547 (31.3%) satisfied these criteria and could be considered to have a reasonable prognosis for withdrawal from methadone. The reasons why the remaining 376 clients (68.7%) were not suitable for withdrawal are illustrated in Table 4. Unstable drug use was clearly the main reason why clients were not suitable for withdrawal. The majority of clients (80%) who were not suitable did not meet two or more of the criteria.

From the group of 171 clients who had good prognosis for withdrawal, only 92 clients (16.8% of total sample, 53.8% of those with good prognosis) were also considerably or extremely interested in withdrawal, and believed that it was considerably or extremely likely they would remain opioid-free for three months post-withdrawal.

Discussion

The key findings from this study are that more than 70% of clients report considerable interest in withdrawing from MMT,

Table 4: The proportion of clients (who were classified as not suitable for withdrawal) who did not meet each criteria (n=376). Note: these are not mutually exclusive categories.

Operational criteria	Percentage of clients who did not meet each criteria
Unstable parenteral opioid use	53.7 (n=202)
Dependence to other substances	30.9 (n=116)
Some level of psychosocial dysfunction	29.8 (n=112)
Experiencing a medical or psychiatric condition	23.3 (n=88)
Less than six months in MMT	14.6 (n=55)
Experiencing chronic pain (requiring continued MMT)	12.3 (n=46)
Pregnant or lactating	3.4 (n=13)

and that there is considerable discrepancy between clients and their treatment providers regarding the perceived outcomes following withdrawal, with the majority of clients (51.2%) reporting that withdrawal would be unlikely to lead to relapse to heroin use. In contrast, treating clinicians and doctors estimated that only a minority of clients (16.9% and 19.4% respectively) would be unlikely to relapse within three months of ceasing MMT. Client prognostic factors indicated that only a minority of clients (31%) had favourable prognosis for methadone withdrawal, and further, only 17% had all three factors: good prognosis, interest in withdrawal, and positive post-withdrawal expectations regarding opioid use.

Before considering the implications of this research, it is necessary to examine a number of potential limitations of the study. One issue is the extent to which this sample of methadone clients is representative of the broader population of Australian methadone clients. The response rate of 39%, similar across the three States, raises questions about the extent to which there may be differences between those clients who completed the survey and those that did not. Furthermore, only urban clients from clinic-based treatment settings were recruited to the study, and it is possible that sampling of rural clients may yield different findings. Nonetheless, comparison between this sample of methadone clients and previously published accounts of Australian methadone clients indicates that there are no marked differences on variables such as age, gender, duration on program, and methadone dose.[2,11]

Another potential limitation is the validity of the data collected from the treating clinicians for the purpose of estimating withdrawal prognosis. The uncertainty here is the extent to which the treating clinicians were actually aware of their client's drug use, medical conditions or psychosocial functioning. Many clients conceal their drug use from their methadone providers (for example in order to retain takeaway dose privileges). A considerable proportion of clients do not utilise their treating methadone prescribers for their general health care, in Victoria at least,[12] and as such, methadone prescribers may be unaware of aspects of the client's medical or psychiatric condition. It is worth noting, however, that clinician estimates of heroin use in the preceding few months in this study were comparable to self-reported heroin use of methadone clients in previously reported Australian studies.[2,11]

There may also be some dispute regarding the validity of the criteria used to adjudge prognosis for methadone withdrawal. While the clinical criteria described in Table 1 can be supported by (limited) research evidence and expert clinical consensus, well-conducted research has not clearly established these criteria as predicting outcomes following withdrawal, and it is possible that the criteria may be over or under-inclusive. Counter to this concern is the finding that most clients (80%) were considered to have poor prognosis for withdrawal due to a combination of reasons, with only a minority being 'excluded' for only one reason, indicating that minor alteration of the prognostic criteria would not significantly alter the findings.

Despite the potential shortcomings of this study, there are a number of clear trends that emerge. There is a high level of interest among clients to withdraw from methadone, which may be the result of several factors. The demands of participation in MMT on a long-term basis are not insignificant for clients. Clients must attend regularly for dosing and treatment reviews; a proportion will experience unwanted side effects to methadone; many will experience stigma from family, friends and the broader community for being 'on methadone'; and there is considerable financial cost involved for some clients (e.g. treatment costs account for an average 20% of methadone client's legitimate income in Victoria[2]). However, the high level of interest in methadone withdrawal should not necessarily be interpreted as methadone treatment being a 'poor' treatment modality. Other areas of medicine reveal that many people with chronic medical conditions (such as diabetes, asthma, Crohn's disease) have ambivalent feelings towards their treatment and often adhere poorly with treatment regimes.[13]

Another trend emerging from the results is the greater client optimism regarding their ability to successfully withdraw from methadone and remain opiate free than their treatment providers. This may reflect undue optimism by clients and/or undue pessimism by clinicians. Several factors suggest the former. First, previous research literature suggests that only a minority of clients can successfully withdraw from methadone and remain opiate free. Second, approximately 50% of clients indicated that they were 'considerably' or 'extremely' likely to remain opiate free for three months following methadone withdrawal; whereas, a much smaller proportion of clients in this sample (31%) met favourable prognostic criteria for withdrawal.

It is possible to extrapolate from these results and to consider policy implications regarding the capacity for methadone clients to successfully 'leave the treatment system'. Although 31% of clients had good prognosis for withdrawal, this does not take into account client interest and expectancies about withdrawal. A smaller proportion of clients (17%) had good prognosis for withdrawal, were very interested in methadone withdrawal, and believed it was very likely that they would remain opiate free

post-withdrawal. However, of these, approximately half would relapse into heroin use within months of completing their withdrawal,[3] suggesting that less than 10% of all existing methadone clients would have a favourable outcome (ceasing methadone treatment and not relapsing to opiates) using conventional approaches to methadone withdrawal. It would seem therefore that the vast majority of methadone clients in Australia (85% to 90%) will benefit from continued methadone treatment. Calls from various sectors in the community and in drug treatment services to encourage clients off methadone programs or to limit the duration of treatment programs are poorly founded, with only a minority of clients likely to benefit from such a policy shift.

There is likely to continue to be an expansion of client numbers in substitution maintenance treatment in Australia. As stated previously, the majority of methadone clients have a poor prognosis for withdrawal and should not be encouraged to cease maintenance treatment. Even if new techniques are developed that improve rates of successful withdrawal completion, clients who continue to frequently use heroin, are dependent on other drugs, have medical or psychiatric complications, or severe psychosocial dysfunction are likely to have poor clinical outcomes, regardless of how withdrawal is attempted. Findings from this study suggest that it is only a minority of clients who are likely to benefit from improved withdrawal techniques, and this number is unlikely to consistently match the continued increase in methadone treatment numbers in Australia (in recent years numbers in Australian methadone programs have increased by 15% to 20% each year[1]). The prospect of improved techniques that facilitate withdrawal from methadone will have obvious benefits to individual clients, but are unlikely to result in a reduction in client numbers in maintenance programs. Furthermore, the introduction of new maintenance pharmacotherapies in Australia (such as buprenorphine and LAAM) is likely to result in an influx of heroin users to treatment, particularly among those individuals previously unwilling to consider MMT. The likely continued expansion in treatment numbers requires that program administrators consider the relevant resource implications of providing treatment to increasing numbers of heroin users.

In summary, there is considerable interest and optimism among most methadone clients about ceasing methadone treatment, despite the findings of this study that suggest otherwise.

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