



Summary Literature Review: The international literature on drugs, crime and treatment.

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Abstract

From a review of the literature on the drugs-crime link, drug treatment effectiveness and the quasi-compulsory treatment of drug dependent offenders (QCT) in five languages (English, Dutch, German, French and Italian) we conclude that: there are complex links between dependent drug use and crime, but there is no single, causal connection between them; drug treatment is effective in reducing the drug use and crime of clients; treatment is more effective if it lasts several months; it is not clear if QCT is successful and more research is needed; this research should include quantitative and qualitative methods and should use clear definitions and measures of drug use, crime, client characteristics (including coercion and motivation) and treatment characteristics.

Introduction

This is a review of the published research literature on drugs, crime, treatment and quasi-compulsory treatment. It covers the literature published in five languages; English, Dutch, German, Italian and French. This literature mainly refers to studies carried out in the countries of North America, Australia and Western Europe. The aim of the review is to provide a basis for the QCT Europe research project. The hypotheses for the project will be based on the research it reviews.

The primary justification for the development of QCT systems has been the posited effectiveness of drug treatment in reducing crime and drug use. Therefore, the partners in QCT Europe agreed to focus their literature review on four areas:

1. The link between drugs and crime.
2. The evidence for the effectiveness of drug treatment.
3. The process and effect of previous and existing QCT systems.
4. Research issues in this field.

These areas have all been reviewed in the past. This review does not aim to duplicate the work that has already been done, but to report on more recent research and to draw out common themes and issues that will inform the development of the QCT Europe project.

This review will use several terms that need clarification. By drug use, we mean the use of psychoactive, illicit drugs other than

under medical prescription. We distinguish infrequent, recreational use of such drugs from more frequent and damaging use by using the term “dependent drug use”¹, while recognising that it is hard to draw a clear line separating these different types. By treatment, we mean the variety of practices that aim to reduce the damage done by drug use to people who engage in that practice by providing individual support to them. By quasi-compulsory treatment, or QCT, we mean treatment of drug dependent offenders that is motivated, ordered or supervised by the criminal justice system and takes place outside regular prisons.

This paper is based on reviews written by researchers in each of the languages. All attempts to summarise research findings lead to a simplification of a more complex reality, and this review attempts to simplify a large and complex area of research. We urge readers to refer to the individual language summaries and to the original research they cite to gain a more sophisticated understanding of the issues covered².

¹ We use this term to denote the behaviours and effects that are included in the DSM-IV definition of “substance-related dependence” American Psychiatric Association (2000). Diagnostic and Statistical Manual of Mental Disorders: DSM-IV-TR. Washington DC, American Psychiatric Publishing.

² These reviews (in English and their original language) are available for download at <http://www.kent.ac.uk/eiss/projects/qct%20europe/>

1. The link between drugs and crime

In all the countries covered in this review (except Italy), use of illicit drugs involves breaking the law. We are also interested in other crimes that are linked to drug use. As Brochu and Brunelle have noted (Brochu and Brunelle 1997), there are two persistent themes in the literature; the correlation of drug use and crime, and the causality of this link.

Correlation

The correlation of high levels of drug use and crime is “one of the most reliable results obtainable in criminology” (Welte, Zhang et al. 2001). It is found in every country included in this review, and at every stage of the drug treatment and criminal justice systems. Before describing some of the abundant evidence in this area, we note that many people use drugs and do not commit any other crime, and many people commit crimes without having used drugs (Barré 1997; Brochu, Cournoyer et al. 1999; Hough 2002; Nationale Drugmonitor 2002; Meijer, Grapendaal et al. 2003)

Criminal justice populations

Numerous studies have examined the nature and extent of drug use among criminal justice populations. Research indicates that a high proportion of offenders have recently used drugs. Studies in the USA, Australia and the UK have found average rates of positive urine tests of between 63% and 69% among arrestees (Bennett 2000; McKegany, Connelly et al. 2000; Arrestee Drug Abuse Monitoring Program 2002; Fitzgerald and Chilvers 2002). In a survey of (registered) crimes in 1993 and 1995 in the Netherlands, 15.1% of crimes were committed by a user of “hard” drugs, 1.6% by users of soft drugs and 75.1% by people who had not used drugs (NDM, 2002; Meijer et al, 2003). The use of hard drugs amongst the general population is 0.5 to 1%.

Prison studies across the developed World have also found far higher rates of drug use among offenders than in the general population. In 2001, 27% of the Italian prison population were categorised as drug dependent (Ministero della Giustizia 2001). Twenty-nine per cent of Swiss prisoners were ongoing users of heroin or cocaine in 1993, compared to 0.5% of the general population (Koller 1997). Between a third and a half of prisoners in Canada and France are also estimated to be dependent drug users (Brochu and Guyon 1994; Facy, Chevry et al. 1997; Jean 1997). The proportion is variable between prisons, but studies across Europe have found that prisoners have much higher rates of drug use than the general population (EMCDDA 2002).

Other studies show that a high proportion of those on probation in the UK and the USA are also estimated to be drug users compared to the general population (Mumola and Bonczar 1998; Hearnden 2000).

Drug treatment populations

Numerous studies of drug users in treatment in several countries have confirmed the correlation of dependent drug use and crime (Anglin and Speckart 1988; Nurco, Hanlon et al. 1991; Bell, Hall et al. 1992; Brecht, Anglin et al. 1993; Laflamme-Cusson, Guyon et al. 1994; Bergmark, Lindberg et al. 1996; Anglin, Longshore et al. 1999; Brochu, Guyon et al. 1999; Coid, Carvell et al. 2000; Daly, Argeriou et al. 2000; Patterson, Lennings et al. 2000; Best, Man et al. 2001; Marshall and Hser 2002). They have shown that frequent drug use tends to be correlated with increased criminal behaviour and suggested that the two behaviours can be mutually sustaining. They also suggest that different types of drug use tend to accompany different patterns of crime. Suggestions have been made that heroin is linked more to property crimes, while violence is more frequently associated with cocaine and amphetamine (McBride and McCoy 1993). The use of cannabis and marijuana is rarely linked to other crimes

(Reiss and Roth 1993), although it is rife amongst offender populations (Bennett 2000; Arrestee Drug Abuse Monitoring Program 2002).

The wider population

The reliability of offenders' reports of their drug use is open to question. Offenders may exaggerate their drug use in order to escape responsibility for their acts and get a lighter sentence (Richard and Senon 1997)³. Drug users tend to enter treatment at the most serious points of their criminal careers (McGlothlin, Anglin et al. 1977). Offenders and drug users in treatment are likely to be those who are most heavily involved in drugs and crime. So studies of these populations may overestimate the correlation of drug use and crime. However, panel surveys involving wider populations also tend to show that it is often the same people who use drugs and commit crimes (Harrison and Gfroerer 1992; Harrison, Erickson et al. 2001; Newcomb, Galaif et al. 2001; Welte, Zhang et al. 2001; Pudney 2002; White, Tice et al. 2002). Nevertheless, these surveys are the main source of challenges to the theory that drugs cause crime. They show that crime often starts before drug use, and so cannot, in these circumstances, be caused by it.

Causality

This debate on the nature of the link between drugs and crime is long-running and yet to be resolved. Many explanations have been put forward, including that

³ Alternatively, they may minimise their drug use so as not to be identified by criminal justice agencies as targets for surveillance and control - Decker, S. H. (1992). *Drug Use Forecasting in St Louis: A three year report*. St Louis, Missouri, Department of Criminology and Criminal Justice, University of Missouri-St Louis, Bennett, T. (1998). *Drugs and crime: the results of research on drug testing and interviewing arrestees*. London, Home Office Research and Statistics Directorate, Edmunds, M., D. Dennis, et al. (Forthcoming). From Pillar to Post: A study of non-engagement in arrest referral and treatment services. London.

dependent drug users commit crimes in order to finance their consumption (Ball, Rosen et al. 1981; Goldstein 1985; Parker and Newcombe 1987; Parker and Bottomley 1996). German law even has a separate category for "direct crimes in the pursuit of drug addiction" (Bundeskriminalamt 2001); drug use leads to changes in the brain that make people more likely to commit crimes (Goldstein 1985; Amen, Yantis et al. 1997; Lavine 1997; Sinha and Easton 1999; Snenghi and Montisci 2000); the prohibition of drug use creates an illegal market that is regulated by violence (Zahn 1980; Goldstein 1985; Stuntz 1998; Resignato 2000); crime provides an income that enables frequent consumption of drugs (Burr 1987); drugs bring users into contact with a deviant sub-culture which also involves crime (Newcomb, Galaif et al. 2001); a third variable (e.g. poverty) leads to both crime and drug use (McBride and McCoy 1993; Edmunds, May et al. 1998; Baron 1999; Buchanan and Young 2000); or that drug use and crime are common elements of a choice to follow a deviant career (Kruezer, Roemer-Klees et al. 1991; Harrison and Gfroerer 1992; Lab 1992; Byqvist and Olsson 1998).

Brochu and Brunelle attempt to integrate several of these arguments by looking at drug use and crime in the context of the individual's life course (not just at one moment), which must be seen in the context of the meanings that each person attaches to their own actions, in the circumstances that they face (Brochu and Brunelle 1997). A different approach is proposed by Deitch and his colleagues, who refer to addiction and crime as "a co-occurring disorder" (Deitch, Koutsenok et al. 2000), suggesting that psychiatry, not sociology, will provide the explanation.

It may be that different crimes have different explanations for different individuals (Shaffer, Nurco et al. 1984; Germain and Le Blanc 1996; Barré 1997), and that there will never be one accepted theory of the drugs-crime link. The current state of knowledge is

summed up by Lurigio and Schwartz who write that “little support can be found for a single specific and direct causal connection” (Lurigio and Schwartz 1999).

2. Research on drug treatment

The overwhelming finding of studies of drug treatment is that it is effective in reducing drug use and crime and increasing health and employment of the people who go through it.⁴

This is a consistent conclusion of literature reviews and meta-analyses in this field (Süß 1995; Facy 1996; Gervasoni and Dubois-Arber 1996; Lurigio 2000; Prendergast, Podus et al. 2000; Schildhaus, Gerstein et al. 2000; Sommer and Künzel 2000; McNulty and Kouimtsidis 2001; Sindelar and Fiellin 2001; Prendergast, Podus et al. 2002). These effects have also been found in large, national, multi-site studies of drug treatment, such as the American Drug Abuse Outcome Study (DATOS) (Hubbard, Craddock et al. 1997; Farabee, Shen et al. 2001; Simpson, Joe et al. 2002) and the English National Treatment Outcomes Research Study (NTORS) (Gossop, Marsden et al. 2000; Gossop, Marsden et al. 2000; Gossop, Marsden et al. 2001; Gossop, Marsden et al. 2002; Gossop, Marsden et al. 2002). A similar, national study, called Vedette, is under way in Italy but is yet to produce definitive results on outcome (Jarre and Salamina 2002).

The results from DATOS and NTORS tend to show no great difference in outcome between different types of treatment. However, Facy and Pani both warn against making generalisations across treatment modalities (Facy 1997; Pani 2000). European research has looked into the specific effects of harm reduction approaches, of therapeutic communities and

of ambulatory, or out-patient programmes. French, Dutch and Swiss research has confirmed the success of opiate substitution in reducing crime, deaths and the transmission of infectious diseases (Facy 1996). An Italian study found that positive effects were increased where psycho-social assistance was offered alongside the prescribed drug (Mollica 2000). However, a German study suggests that there is a greater risk of relapse after completion of substitution treatment, compared to other treatment types, with a high risk of returning to a life of crime (Bühringer, Künzel et al. 1997).

Another German study also suggested that out-patient therapy has a lower rate of success than in-patient (Küfner and Feuerlein 1989), although a later study did not find the same difference (Süß 1995). In the Italian Vedette study, retention in methadone treatment is shown to be high, compared to therapeutic communities, while out-patient drug-free treatment has lower retention than both other types (Jarre and Salamina 2002). Researchers in Italy, as elsewhere, have calculated that the savings associated with reduced crime and increased health produced by treatment are far greater than the costs of that treatment (Gerstein, Johnson et al. 1994; Pani 2000).

It has been argued that the most important influence on outcome of drug treatment is the length of time that a person spends in it (Farges and Patel 1996); retention is the “only consistent predictor of a successful outcome following treatment release” (Maxwell 2000). Studies in several countries, with various treatment types, have shown that the positive outcome is more likely when a drug user spends several months in treatment (Holland 1983; Siddall and Conway 1988; Küfner and Feuerlein 1989; Herbst 1992; Kindermann and al 1992; Kunz, Overbeck-Larisch et al. 1992; Egg 1993; Sickinger 1994; Süß 1995; Farges and Patel 1996; Simpson, Joe et al. 1997; Lang and Belenko 2000; Prendergast, Podus et al. 2000; Sonntag and Künzel 2000;

⁴ Although the effect on crime may be smaller than that on drug use (Prendergast, Podus et al 2002)

Farabee, Shen et al. 2001; Gossop, Marsden et al. 2001). The recommended minimum number of months varies from three months (Hough 2002) to eight (Herbst 1992), or even twelve months (Scheller and Klein 1986) (although Herbst did not find any additional benefit for twelve compared to eight months).

Similar client characteristics are associated with both retention and improved outcome. They include better education, more employment opportunities, high initial motivation, good relationships with treatment staff, good mental and physical health, older age, higher socio-economic status (Küfner and Feuerlein 1989; Lert and Fombonne 1989; Süß 1995; Howard and McCaughrin 1996; Joe, Simpson et al. 1999; Peters, Haas et al. 1999; Schalast 2000; Sonntag and Kunzel 2000; Vogt 2000).

The effects on treatment of ethnicity and gender have not been adequately covered in the research. Some reviews have reported no significant difference in outcome between different sexes (Prendergast, Podus et al. 2002) and ethnicities (Gostin 1991). But a different review found that women were less likely to return to crime after treatment (Egg 1993). It has been argued that women should receive specialised treatment (Ettore 1992), and that women do have different patterns of drug use, crime and treatment participation (Kawamura 2000; Vogt 2000; Zurhold 2000).

Various studies have suggested that the content and context of treatment affect outcome. The factors that have been linked with success include high programme integrity, evaluation of the programme, a programme that lasts several months, high staff/client ratio, a multi-disciplinary team, use of drug testing (especially early in treatment), motivational therapy, cognitive-behavioural approaches, a high number of group therapy sessions and provision of aftercare (Ball and Ross 1991; Rihs-Middel 1995; Howard and McCaughrin 1996; Schneeberger, Lauzon et al. 1996; Pearson

and Lipton 1999; Lurigio 2000; Prendergast, Podus et al. 2000; Sonntag and Kunzel 2000; Huissoud and Morency 2001; Hough 2002). Fiorentine and her colleagues have suggested that the client's perception of the utility of treatment is a useful predictor of retention and outcome (Fiorentine, Nakashima et al. 1999)

One study suggested that motivation predicts both retention and engagement better than any other aspect of the client (Joe, Simpson et al. 1999). Another suggested that motivation is a less important predictor of treatment engagement and retention than are the characteristics of treatment (Fiorentine, Nakashima et al. 1999).

Despite generally positive findings, it is premature for drug treatment to be regarded as a particular solution for reducing crime at the societal level. It has been suggested that the introduction of extensive substitution programmes have reduced the amount of drug-related crime in Germany (Schatzle, Christen et al. 1998). And as some dependent drug users are prolific offenders, even small reductions in their offending may be cost-effective (Gossop, Marsden et al. 2000). But some writers have argued that individual reductions in criminal behaviour are very small and do not significantly reduce the overall crime rate, due to the relatively little number of people in treatment, and the return of many users to crime a short time after treatment (Broër and Noyon 1999; Stimson 2001).

3. Research on quasi-compulsory treatment

Can using the criminal justice system to coerce drug users into treatment extend the positive results of drug treatment? This is still a controversial question. QCT involves bringing together two systems, of treatment and criminal justice, that have contrasting, and often conflicting, priorities and values (Bean 2002). Many people have doubts as to

whether coercion can lead to successful treatment (Lert and Fombonne 1989). In spite of these doubts, many countries have developed legal and treatment systems on the assumption that QCT can have good outcomes. The research evidence on this is not clear.

Until the 1970's, the record of coercive treatment was distinctly unpromising, with most programmes regarded as failing to reduce crime and drug use (Bachmann, Burkhard et al. 1985; Webster 1986; Inciardi 1988). However the California Civil Addict programme did report positive results (McGlothlin, Anglin et al. 1977). Since then, reviews of American research have suggested that legally coerced treatment is at least equally as effective as other drug treatment (Gostin 1991; Hall 1997; Farabee, Prendergast et al. 1998; Wild 1999; Lurigio 2000; Wild, Roberts et al. 2002). In particular, Treatment Alternatives to Street Crime (TASC) and Drug Courts have been reported to produce significant reductions in crime and drug use (Anglin, Longshore et al. 1996; Anglin, Longshore et al. 1999), although other studies have not found these effects (Belenko, 1995; Spohn, 2001). The positive reports have been challenged by authors who suggest that they are methodologically flawed (Baas 1998; Nolan 1998; Wild 1999; Hoffman 2000). More sophisticated analysis has shown that outcomes from Drug Courts vary over time, are sensitive to the characteristics of the people sentenced by them and to the context in which they operate (Goldkamp, White et al. 2001).⁵

⁵ It should be noted that QCT is applied to different target groups in different countries. For example, American Drug Courts have focused on drug-crime offenders, who may not be either serious criminals, or dependent on drugs. Other systems, such as the English DTTO, are focused on other groups, e.g. acquisitive, drug-dependent criminals. Also, the use of mandatory minimum sentences limits the ability of American courts to divert offenders from prison to treatment. This shows the need to carefully describe the groups that are entering treatment in order to be able to

Results from other countries are also mixed. Swiss results are similar to those from American reviews. In Switzerland, there are four legal routes for offenders to go through the courts into drug treatment. These routes accounted for about a third of clients in in-patient drug therapy in 1995-1998, and about 4-6.5% of clients in out-patient treatment in 1998. These clients were found to be less motivated than those who volunteered for treatment (Maier 1994). However, an evaluation of 2,793 clients found no significant differences in outcome at treatment exit between voluntary and court-referred clients (Grichting, Uchtenhagen et al. 2002). Court-referred clients stayed significantly longer in treatment. Another study of residential drug treatment clients found no significant differences in drug use and social integration between voluntary patients and court referrals after the first 18 months following discharge, although this finding may have been affected by high drop-out from follow-up interviews by court-referred clients (Dobler-Mikola, Grichting et al. 2000).

In the Netherlands, various QCT approaches have been evaluated. The Early Intervention Approach only reached a small proportion of the eligible offenders (Koeter 2000), had high drop-out rates and produced no difference in drug related nuisance compared to no treatment (Koeter 2002). A study of the IMC approach also showed high drop-out and no effects (Gestel 1999). A study of the Triple-Ex programme (with no control group) showed better results, with 41% of clients being abstinent and 64% not being arrested for acquisitive crime at follow-up (Vermeulen, Hendriks et al. 2000). Clients who entered this programme under the threat of imprisonment stayed longer in treatment than those who entered voluntarily, or with other types of legal coercion. Other studies on specific QCT programmes show a high drop-out rate, but

compare outcomes across projects and programmes; a need which is sometimes ignored in existing research.

significant reductions in crime, even for those who dropped out, compared to the control group (Baas 1998; Bieleman, Biesma et al. 2002).

Germany also has a variety of QCT approaches, and these accounted for 20% of men and 11% of women undergoing treatment in 2000 (Welsch 2001). German research is generally less encouraging regarding the effectiveness of coerced treatment. Several studies have shown that legal pressure can reduce the prospects for successful treatment (Projektgruppe Rauschmittelfragen 1991; Sickinger 1994). Schalast showed a strong correlation between entering treatment under legal coercion and relapse (Schalast 2000), a link that was also highlighted by a German study of Sweden that showed that only 10% of clients of compulsory treatment were drug-free at follow-up (Heckmann 1997).

QCT is a more recent development in the UK⁶, and results of the recently introduced Drug Testing and Treatment Order (DTTO) are inconclusive. In England, pilot DTTO projects had high drop-out, but significant falls in crime and drug use for those who stayed on the programme (Turnbull, McSweeney et al. 2000). There were difficulties in establishing coherent programmes. In Scotland, the order has been introduced differently, and pilot results are more encouraging, with lower drop-out (Eley, Gallop et al. 2002). It seems that 2 year follow-up is likely to show that longer term results of the English pilot DTTO's are similar to those of other community punishments (McSweeney, Hough et al. 2002).

There is no national data available on the effect of coerced treatment in Italy, although there have been legal mechanisms to

encourage drug dependent offenders into treatment there for several years.

A recurring theme in the literature on QCT is the importance of motivation, and its relationship with coercion. Lert and Fombonne argue that motivation is the most important factor, and that external, legal pressure undermines internal motivation and should therefore be avoided (Lert and Fombonne 1989). They echo other writers who have argued that compulsion compromises the treatment process (Harford, Ungerer et al. 1976; Rounsaville and Kleber 1985; Schottenfeld 1989)). This argument is backed by the German research referred to above, although Egg did find that coercion could increase motivation in some cases (Egg 1993). Canadian researchers have also found high drop-out in treatment under legal supervision (although outcomes for those who stay in treatment are similar to other treatment clients) (Beaudet, Brochu et al. 1995; Brochu and Schneeberger 1999). The argument is challenged by American authors who have generally found that legally coerced clients have retention and outcome that is at least as good as their volunteer counterparts (Anglin and Maugh 1992; Hall 1997; Farabee, Prendergast et al. 1998; Wild 1999; Lurigio 2000).

In recent years, more subtlety has been brought to this debate by researchers who have tried to find out what is contained within the categories of coercion and motivation (Debourg 1997; Simpson, Joe et al. 1998; Wild, Newton-Taylor et al. 1998; Knight, Hiller et al. 2000; Maxwell 2000; Hiller, Knight et al. 2002; Wild, Roberts et al. 2002; Young 2002). They have argued that coercion is not a simple product of legal pressure. Pressure can come from other sources, and will be experienced differently by different individuals. So coercion should be measured in other ways than just by legal status. Similarly, instruments have been developed to measure various aspects of motivation, so that the type and effects of both coercion and motivation can be analysed. Studies using these tools have

⁶ Courts have been able to attach conditions to attend treatment to probation orders, but this option is not frequently used (Bean 2000).

found that some people under legal supervision are themselves motivated for treatment, and they stay longer and engage more in treatment than those who are not motivated (Knight, Hiller et al. 2000; Hiller, Knight et al. 2002). It has also been found that different types of legal pressure have different effects on retention. For example, Young has suggested that enforcement should be "quick, certain, but not severe" (Young 2002), and others have also recommended that programmes should make sure that sanctions are clear and quickly enforced (Bean 2002; Young and Belenko 2002). Several writers have suggested that therapeutic methods for increasing motivation early in treatment can be successful in enhancing treatment engagement and retention (Joe, Simpson et al. 1998; Brochu and Schneeberger 1999; De Leon, Melnick et al. 2000; Sonntag and Kunzel 2000).

Coercion may not only affect the individual, but also the whole process of treatment. American researchers have found longer retention and better outcome for legally coerced clients, compared to non-coerced clients, in programmes with a higher proportion of legally coerced clients (Howard and McCaughrin 1996; Hiller, Knight et al. 1998). German research suggests . In contradiction to the conclusions from American research, German research suggests that the apparent success of coercion may be because the presence of coerced clients has a negative effect on others within these programmes. Behaviours may be transferred from prison, damaging the group process and leading to early drop-out by those people who do not have to be there (Alzinger, Dexheimer et al. 1995).

QCT relies on the cooperation of agencies such as the police, judiciary, health service and treatment centres, which may not share the same values and attitudes. This has been found to be problematic in several countries. The English pilot DTTO's were seriously compromised by difficulties in inter-agency

working (Turnbull, McSweeney et al. 2000). Mistrust and misunderstandings between the relevant professions have also been found in France (Crété 1997; Setbon 2000), Australia (Heale and Lang 2001) and North America (Wild 1999; Wild, Newton-Taylor et al. 2001). Such difficulties lead to delays which may compromise treatment (Projektgruppe Rauschmittelfragen 1991; Egg 1993; Broër and Noyon 1999; Jamouille 2000) and also make it harder to implement the necessary coherent and decisive responses to client needs and relapses (Maxwell 2000; Bean 2002; Young 2002).

These debates and problems are not going to be resolved without close attention to how coercion is delivered. But the state of research on the process of legally coerced treatment is weak (Simmat-Durand 1999; Belenko 2001; Goldkamp, White et al. 2001). More research is needed on the mechanisms and contexts through which these approaches operate (Pawson and Tilley 1998; Setbon 2000).

4. Research issues

There are important problems with the research in this field. Several writers have commented on the methodological weaknesses of studies of QCT (Nolan 1998; Brochu and Schneeberger 1999; Wild 1999; Belenko 2001; Wild, Roberts et al. 2002). These weaknesses include: lack of control groups; retrospective designs; small samples; using data only on people who succeed in treatment (rather than from all those who go through QCT); short and variable follow-up periods; conceptual confusion on such terms as outcome, coercion and motivation; lack of information on the process of QCT; reliance on (unreliable) official records of recidivism; insufficient attention to characteristics of clients and treatments; and failure to repeat studies to check variance of outcome over time.

There are also large gaps in the literature. Most of the published studies are American. Some countries, like Italy, have to rely on research from other countries, with different cultures and problems, to inform their practice. Some types of treatment, including opiate substitution, have rarely been included in studies of QCT. Research in this field has tended to focus on one element of the QCT system (usually clients in treatment), rather than studying all elements of the system (including police, probation, courts and treatment staff). And the views and perceptions of people who are directly involved in the system are rarely sought, other than through structured questionnaires with closed questions.

Perhaps the most important gap in the existing literature is the lack of attention that has been paid to the process of QCT. Several studies have identified a need to clarify the processes and conditions which promote or hamper the correct operation of judicial measures (Cr  t   1997; Pawson and Tilley 1998; Simmat-Durand 1998; Brochu and Schneeberger 1999; Simmat-Durand 1999; Ernst, Aeschbacher et al. 2000; Jamouille 2000; Setbon 2000; Belenko 2001; Goldkamp, White et al. 2001; Kellerhals, Morency et al. 2002). It can be argued that the use of coercion in treatment is not just another variable. Rather, QCT entails a whole set of processes that we need to understand: how do judicial and treatment systems cooperate; how are decisions to begin and end QCT taken; how does coercion affect staff commitment and client engagement, and how do these two elements affect each other; how does QCT change over time; and how do people who go through it experience these issues, and others? All these elements of the QCT process will affect the interaction of other variables. It would be hard to reach an adequate understanding of QCT without examining them.

We can take these problems as a warning for future researchers, and we can build on the advances that have been made. Existing

research has given us several theories, which can be tested in any new research, about what the effects of legally coerced drug treatment are likely to be, and how these effects are produced. It has also given us reliable tools that can be used in future studies, including instruments to measure client characteristics such as mental health, coercion and motivation. It teaches us that future studies should use large samples in multiple sites with carefully described comparison groups and lengthy follow-up. It suggests that, before we complete these lengthy follow-up periods, retention in treatment and outcome at exit from treatment can be used as proxies for long-term outcome⁷. It recommends the use of sophisticated statistical techniques to test theoretical relationships between variables. It tells us that researchers should describe the systems, contexts and mechanisms through which QCT operates and should take full account of the meanings attached to them by people who work in and are treated by these systems.

⁷ Which can then be checked against actual long-term outcome.

5. Conclusion

This review suggests that future research should test hypotheses on the effectiveness of QCT in reducing drug use and crime and increasing health and socialisation. These effects can be compared between people who go through QCT, who get other sentences, and who enter drug treatment outside QCT. However it is likely that these groups will differ in the characteristics that affect treatment outcome, so care will need to be taken that inappropriate comparisons are not made. As it is very difficult to randomise comparison groups by enforcing randomised sentencing, this will have to be achieved by statistical controls between groups that meet the criteria for such controls to be performed.

The research also suggests a number of other hypotheses in the areas that have been described above. A list of all the suggested hypotheses, with the references to publications that suggest them, is appended to this document. Other hypotheses should be generated and tested in the implementation of qualitative research on the QCT process.

To summarise, the main points to come out of this international literature review on quasi-compulsory treatment of drug dependent offenders (QCT) are:

- There is a link between dependent drug use and crime.
- But there is no single, causal connection between drug use and crime.
- Drug treatment (outside QCT) is effective in reducing the drug use and crime of clients, and increasing their health and employment.
- Treatment is more effective if it lasts several months.
- It is not clear if QCT is successful. European research tends to be more pessimistic than American research has been since the 1970's.
- More research is needed on the process and outcomes of QCT.
- This research should include quantitative and qualitative methods.
- This research should use clear definitions and measures of drug use, crime, client characteristics (including mental health, coercion and motivation) and treatment characteristics.

Appendix A

Hypotheses suggested by the review, with references.

N.B. Where existing research suggests no difference between groups, the hypothesis is stated in order to retain the principle that it should be the null hypothesis that posits no difference between groups.

Differential effects

- A. That QCT has different effects for men and women (Kawamura 2000; Vogt 2000; Zurhold 2000; Prendergast, Podus et al. 2002) .
- B. That QCT has different effects for different ethnic groups (Gostin 1991).
- C. That QCT has different effects for people who have committed different types of offences (e.g. property, violent, or drug law offences) (Miller and Flaherty 2000) .
- D. That QCT has different effects for people who have different criminal careers (e.g. different lengths and severity of criminal involvement) (Miller and Flaherty 2000).
- E. That order of onset of crime and drug use predicts outcome (crime and drug use) (Van Kammen and Loeber 1994; Welte, Zhang et al. 2001).
- F. That QCT has a larger effect on drug use than on crime (Broër and Noyon 1999; Prendergast, Podus et al. 2002).
- G. That QCT reduces property crime more than it reduces violent crime (McBride and McCoy 1993).

Client characteristics

- H. That initial motivation is the most important feature in predicting retention, drug use and criminality outcome among all subjects (Simpson and Joe 1993; Joe, Simpson et al. 1998; Fiorentine, Nakashima et al. 1999; Hiller, Knight et al. 2002; Prendergast, Podus et al. 2002).
- I. That mental health at entry predicts retention and outcome (Vogt 2000).
- J. That self-efficacy at entry predicts retention and outcome (Prendergast, Farabee et al. 2002).
- K. That legal status at entry predicts retention (Hiller, Knight et al. 1998; Knight, Hiller et al. 2000).
- L. That perceived coercion predicts retention (Young 2002).
- M. That perceived coercion is predicted by legal status at entry to treatment (Young 2002)
- N. That those subjects entering QCT are less motivated at treatment entry than those who enter treatment voluntarily (Projektgruppe Rauschmittelfragen 1991; Sickinger 1994; Schalast 2000).
- O. That perceived coercion is negatively correlated with motivation (Projektgruppe Rauschmittelfragen 1991; Sickinger 1994; Schalast 2000).
- P. That primary drug used (cocaine, heroin, alcohol, other) predicts crime and drug use outcome (Howard and McCaughrin 1996).
- Q. That age of subject predicts crime and drug use outcome (Howard and McCaughrin 1996).

Victimisation

- R. That QCT reduces the criminal victimisation of its subjects⁸.

⁸ This hypothesis is inferred from the finding that drug users are disproportionately victimized by crime Goldstein, P. J. (1985). "The drugs/violence nexus." *Journal of Drug Issues* **15**: 493-506, De Li, S., H. D. Priu, et al. (2000). "Drug involvement, lifestyles, and criminal activities among probationers." *Journal of Drug Issues* **30**(3): 593-619., so it is hypothesized that their victimisation decreases with their involvement in drug use.

Treatment characteristics

- S. That the most important determinants of effect of QCT are length of involvement in treatment of the subject, programme integrity, provision of treatment aftercare following exit (Prendergast, Anglin et al. 1995; Farges and Patel 1996; Howard and McCaughrin 1996; Maxwell 2000).
- T. That different types of treatment (residential, out-patient drug-free and outpatient opiate substitution) have different rates of retention and difference outcomes on drug use and crime (Gossop, Marsden et al. 2002; Prendergast, Podus et al. 2002).
- U. That a higher staff/client ratio improves the drug use and crime outcome of QCT (Howard and McCaughrin 1996).

System effects

- V. That treatment centres with a higher ratio of clients under QCT have higher drop-out rates among their voluntary clients (Alzinger, Dexheimer et al. 1995; Howard and McCaughrin 1996; Hiller, Knight et al. 1998).
- W. That QCT systems which involve the sentencing judge in subsequent case reviews have better retention and outcome than those that do not (McKegany, Connelly et al. 2000; Bean 2002).
- X. That QCT systems that process drug tests and case reviews more quickly have better retention and outcome (Bean 2002; Young 2002).

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