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Ciska Wittouck Anne Dekkers Wouter Vanderplasschen Freya Vander Laenen

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Psychosocial functioning of drug treatment court clients: a study of the prosecutor's files in Ghent, Belgium

Ciska Wittouck, Anne Dekkers, Wouter Vanderplasschen and Freya Vander Laenen

Ciska Wittouck is a PhD Student and Freya Vander Laenen is a Professor in Criminology, both are based at Department of Penal Law and Criminology, Ghent University, Ghent, Belgium.

Anne Dekkers is a Teaching and Research Assistant and Wouter Vanderplasschen is an Assistant Professor, both are based at Department of Special Education, Ghent University, Ghent, Belgium.

Abstract

Purpose – Problem solving courts are a result of the therapeutic jurisprudence movement. Drug treatment courts (DTCs), for instance, aim to divert substance using offenders away from the criminal justice system (CJS) to (drug) treatment services. DTCs are associated with reduced criminal offending and substance use. Psychosocial outcomes of DTCs, such as employment, health and family relations, received only little attention. The paper aims to discuss these issues.

Design/methodology/approach – This paper focuses on the outcomes regarding substance use and psychosocial variables of a Belgian DTC situated in the Ghent region, which were investigated by a naturalistic evaluation study with a pre- post-design using judicial files.

Findings – The results show that Ghent DTC clients were diverted to drug treatment and financial counselling services. Next the Ghent DTC produced beneficial outcomes regarding employment. Contrary to criminal offending (De Keulenaer and Thomaes, 2013), substance use was not significantly reduced in the Ghent DTC sample. Yet more compliance with opioid maintenance treatment was observed. Information on more client centred outcomes such as health and social relations was lacking, precluding a full outcome measurement of psychosocial variables.

Research limitations/implications – Future DTC studies should address more client centred outcomes by gathering information through DTC clients and treatment services instead of solely relying on judicial data sources. In addition, DTCs should develop a clear and uniform registration system regarding these outcomes.

Originality/value – Since the therapeutic jurisprudence movement continues to expand, discussion regarding the roles and tasks of the CJS as well as treatment and counselling services is vital. Each actor should maintain its own role and task, regarding monitoring and substantive work, to insure a “problem solving approach” that is in line with the recovery philosophy.

Keywords Criminal justice system, Belgium, Psychosocial outcomes, Drug treatment courts, Therapeutic jurisprudence movement, Substance use

Paper type Research paper

Introduction

During the past decades, therapeutic jurisprudence has been developed in the criminal justice system (CJS) and is defined as the extent to which legal procedures and decisions can affect therapeutic outcomes in the individuals involved (Lurigio and Snowden, 2009). Since standard prosecution has proven largely unsuccessful in reducing criminal offending and enhancing (drug) abstinence in offenders with specific (treatment) needs, such as substance use or mental health treatment and social services, a problem solving approach was established in the CJS by moving away from standard prosecution to administering community-based judicial alternatives (Dematteo *et al.*, 2013; Heilbrun *et al.*, 2012). Problem solving courts (PSCs) are, next to diversion to treatment by police officers or by public prosecutors, a result of this therapeutic

jurisprudence movement (DeMatteo *et al.*, 2013). PSCs are specialized courts in which the underlying individual problems contributing to criminal offending of a defendant are addressed (Slinger and Roesch, 2010). Indeed, criminal offending is often a result of societal, social and/or personal factors (Winick, 2003). Main examples of PSCs are mental health courts, community courts and drug treatment courts (DTCs) (Heilbrun *et al.*, 2012).

Psychosocial outcomes of DTCs

DTCs were introduced in order to divert substance users away from the CJS to (drug) treatment services where the underlying substance use problem and associated psychosocial difficulties can be addressed (Huddleston and Marlowe, 2011). Several studies found beneficial results of DTCs on criminal offending and substance use (Brown, 2010; Belenko, 1999, 2001; Government Accountability Office, 2005; Mitchell *et al.*, 2012; Shaffer, 2011; Wilson *et al.*, 2006). To date, only a small amount of research has focused on psychosocial outcomes of DTCs, and the studies that do often find no statistical significant effects (Green and Rempel, 2012; Wittouck *et al.*, 2013). Yet substance use disorders (SUDs) are typically associated with severe psychosocial difficulties such as poor health and well-being, an inadequate social network, unemployment and a precarious financial situation (Fiorentine and Hillhouse, 2000; Kelly *et al.*, 2006; Laudet and White, 2010; McLellan *et al.*, 2000). These difficulties remain for several years after abstinence has been achieved, particularly in the area of employment (Laudet and White, 2010). Recovery can be defined as “the establishment of a fulfilling, meaningful life and a positive sense of identity founded on hopefulness and self-determination” (Schrank and Slade, 2007, p. 321). Addiction recovery thus clearly goes beyond abstinence from substance use and addresses all associated psychosocial problems and is oriented at social inclusion, quality of life and building positive identities. Earlier research findings have provided evidence for the assumption that addressing these co-occurring psychosocial problems can enhance treatment retention, social adjustment, and outcomes regarding substance use and offending (McLellan *et al.*, 1994, 1998; Sampson and Laub, 1990; Schroeder *et al.*, 2007). Moreover, addressing these co-occurring psychosocial problems is important since they are problems for which positive outcomes are desired by drug users themselves. After all, reducing substance use and drug related crime are socially desirable outcomes (De Maeyer *et al.*, 2009; Squirrell, 2007). Indeed, there is evidence that providing specific interventions to DTC clients which target specific psychosocial problems can produce positive outcomes on these psychosocial life domains. This is for example the case for interventions targeting family relations (Boles *et al.*, 2007; Burrus *et al.*, 2011; Worcel *et al.*, 2008) or vocational skills (Leukefeld *et al.*, 2007).

The Ghent DTC

In Belgium, the first DTC was implemented in May 2008 in Ghent, a judicial district which is part of Flanders (i.e. the Dutch speaking part of Belgium). The Ghent DTC programme is situated at the sentencing level of the CJS, namely on the pre-conviction court level. Although voluntary, programme entry requires a guilty plea and an explicit statement by the offender in front of the court that he/she is motivated to start (drug) treatment. Offenders who are suffering from SUDs and who are engaged in substance related crime are considered eligible to enter the Ghent DTC. Violent or mentally ill offenders can participate in the Ghent DTC, while sexual offences and organized crime offences related to drugs are exclusion criteria for participation in the Ghent DTC.

The Ghent DTC programme is characterized by four types of public hearings which are usually held every two weeks. During the introductory hearing, the eligibility of the defendant to participate in the Ghent DTC is set out by the public prosecutor and the working principles of the Ghent DTC are explained by the judge to the eligible defendant, after which he/she can either accept or refuse participation in the programme. If the defendant accepts the DTC programme, an appointment with the liaison (see below) is made. When the defendant refuses the DTC programme, standard judicial processing follows. During the orientation hearing, the DTC client proposes the goals set out in his/her treatment plan, which he/she had prepared in cooperation with the liaison, to the judge and to the public prosecutor. When the treatment plan is accepted by the court, the liaison refers the DTC client to the appropriate community (drug) treatment services in order to implement the treatment plan. If the treatment plan is rejected by the court,

the DTC client revises it in collaboration with the liaison after which a new orientation hearing is scheduled. During multiple follow-up hearings, the judge monitors the implementation of the treatment plan. The DTC client is expected to present evidence of compliance to the treatment plan, such as certificates of attendance at treatment or counselling sessions and drug test results. In the final hearing, after either successful completion or early termination of the DTC programme, the implementation of the treatment plan is evaluated. The judge sentences the DTC client whereby compliance to the treatment plan is taken into account as an attenuating factor. On average, a DTC programme (from the introductory to the final hearing) takes six to eight months.

Specific features of the Ghent DTC

Some characteristics of the Ghent drug court model require further specification since they differ from the characteristics of US DTCs (Huddleston and Marlowe, 2011; National Association of Drug Court Professionals, 2013; Vîlcică *et al.*, 2010). Next to the traditional criminal justice actors involved in a court hearing (the judge, the public prosecutor, the defendant and the defendant's lawyer), a liaison is present at every DTC hearing. The liaison is an intermediary between the CJS, (drug) treatment services and the DTC client. The liaison is a counsellor and he/she holds professional confidentiality, as opposed to probation officers who are employees of the CJS and who have an obligation to report to the CJS (Bauwens, 2011). The task of the liaison is to inform potential DTC clients about the DTC working principles; about the expectations of the DTC and about the possibilities regarding community (drug) treatment services. Their most important task is to develop a treatment plan together with the DTC client in which the individual needs of the DTC clients regarding substance use and other psychosocial variables are met. As opposed to other DTCs (e.g. Huddleston and Marlowe, 2011; Mclvor, 2009; National Association of Drug Court Professionals, 2013), no preliminary or staff meetings take place between the different DTC actors involved without the presence of the DTC client. Next, the Ghent DTC refers clients to independent community (drug) treatment services, such as specialized outpatient and inpatient drug treatment services, mental health services, vocational services, housing services, and social and public welfare services, and not to integrated (drug) treatment systems within the CJS as is the case in US DTCs (Vîlcică *et al.*, 2010). Opposed to other DTCs (Huddleston and Marlowe, 2011), drug testing is not supervised by the Ghent DTC, but administered by community health professionals, such as the general practitioner. To guarantee professional confidentiality of counsellors and to stress the responsibility of the DTC clients, information on the results of drug testing and of attendance at treatment sessions is exchanged to the court by the DTC client and not by the liaison or by the community (drug) treatment services. The issues that are addressed during treatment sessions is covered by professional confidentiality and is not exchanged with the court.

Programme completion is not determined by predefined goals which have to be achieved by all Ghent DTC clients. Instead, the treatment plan contains unique and individual programme goals which are provided by every DTC client separately and which need to be approved by the public prosecutor and the judge. The DTC programme is deemed to be successfully completed when a DTC client accomplished the goals set out in the treatment plan and is embedded in a care network. Thus the Ghent DTC focuses on referring DTC clients to community (drug) treatment and counselling services rather than on DTC clients completing these treatment and counselling interventions or on reaching abstinence. Early termination of a DTC programme occurs when a DTC client is persistently non-compliant with his/her treatment plan, has been dishonest regarding his/her substance use or offending behaviour or the implementation of the treatment plan, or whenever a DTC client wishes to end the DTC programme. Relapses into substance use are considered an inherent feature of SUDs by the judicial actors involved with the Ghent DTC. Consequently relapse as such is not a criterion for early termination of the programme, dishonesty about relapse is.

The present study

Addressing psychosocial difficulties experienced by drug users can be an important contributor to their recovery process (Wittouck *et al.*, 2013). Nevertheless past DTC research had an almost

exclusive focus on outcomes regarding criminal offending and substance use. Research findings concerning psychosocial outcomes of DTCs are scarce, although some promising results have been documented (Boles *et al.*, 2007; Burrus *et al.*, 2011; Green and Rempel, 2012; Leukefeld *et al.*, 2007; Worcel *et al.*, 2008). The present study therefore aims to examine the outcomes of the Ghent DTC programme regarding substance use and associated psychosocial difficulties in a subsample of Ghent DTC clients.

Method

Study design

The Belgian sentencing practice does not allow an experimental research design. In Belgium, magistrates generally opt for alternative sanctions to imprisonment when adjudicating a drug using offender. Only if the drug-related offences are too serious or if the offender persists in crime, a traditional sanction is imposed (De Wree *et al.*, 2009). Therefore, a pre-post-design was developed. A naturalistic evaluation study was considered appropriate because of its longitudinal nature and because the outcomes are studied in existing services and under realistic circumstances (Gossop *et al.*, 2006; Green and Rempel, 2012).

Ghent DTC clients were considered eligible for study inclusion if they met the following criteria: first, the Ghent DTC final hearing was held between 5 May 2008 and 31 December 2009; second, the defendant used at least one illicit substance; third, the defendant accepted the Ghent DTC programme; fourth, the DTC programme lasted at least three months and was either successfully completed or early terminated; and five, the judicial file was present at the administration service of the public prosecutor's office. Three months was considered as an appropriate minimum length of a DTC programme since this time frame is recognized as necessary to detect minimal intervention outcomes (Simpson *et al.*, 1997; Marlowe, 2003). Additionally, Freeman (2003) found that the most profound changes in a sample of DTC clients occurred during the first four months of a DTC programme. Although short term intervention can be advantageous, longer retention is associated with more favourable and enduring outcomes (Hser *et al.*, 2001; Marlowe, 2003; McLellan *et al.*, 2000).

Procedure

The study design was approved by the ethical board of the Ghent Law Faculty and the Belgian Commission for the protection of privacy.

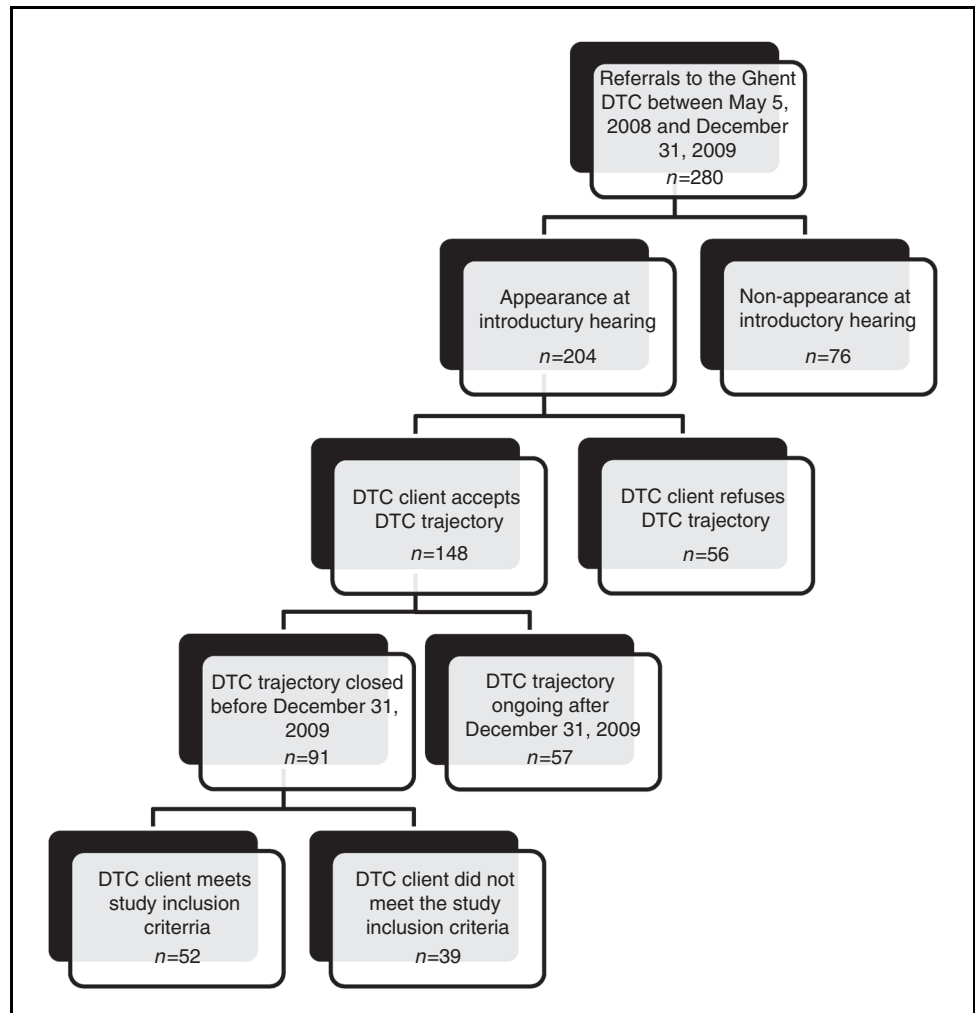
Data were collected by means of a retrospective judicial file study using a checklist (which was based on a checklist used in a study by De Wree *et al.* (2009). The psychosocial variables which were included in the checklist were based on the life domains[1] as assessed in the Addiction Severity Index (McLellan *et al.*, 1992). Data collection was carried out using judicial files. Since the data in the files were recorded for the purpose of the DTC operation and not for the purpose of scientific research, the data can be considered secondary data. Although this approach is time and cost efficient it is also associated with disadvantages. For instance, the required (detailed) information needed for a research study can be biased or incomplete (Boslaugh, 2007).

Baseline data, i.e. at the start of the DTC programme, were collected using the checklist from the preparatory judicial DTC file, from the files of the public prosecutor concerning the DTC introductory and orientation hearing and from the DTC treatment plan as composed by the DTC client and the liaison. Post-measurement data, i.e. at the end of the DTC programme, were collected using the checklist from the files of the public prosecutor concerning the DTC final hearing. Of the 91 DTC clients who had started and completed a DTC programme in the predefined time frame, 52 met the inclusion criteria and 39 did not (see Figure 1).

Data analysis

Since detailed data were largely missing or incomplete due to the use of secondary data, the available data were dichotomized. Descriptive statistics were used to analyse the baseline characteristics of the study sample. Non-parametric-one-sample- χ^2 -tests were conducted to assess baseline to post-measurement differences regarding substance use and psychosocial

Figure 1 Consort diagram of the sampling



variables if information was available for at least 30 respondents on each measurement point to obtain a sufficiently large sample size in each class as much as possible in order to provide reliable analyses. Since there is no consensus on the lower bound of large samples for binary data, we based the $n = 30$ on the lower bound for large samples for quantitative variables (Agresti and Min, 2002).

All analyses were performed with SPSS Statistics.

Results

Characteristics of the study group

The Ghent DTC group consisted of nine females (17.3 per cent) and 43 males (82.7 per cent). The mean age was 30.4 years ($SD = 7.242$, range = 20-52). In all, 17 participants were younger than 25 (32.7 per cent). At the start of their DTC programme, ten DTC participants were living alone (27 per cent), seven cohabited with their partner (18.9 per cent), 13 had a different cohabitation (35.1 per cent), and seven were detained (18.9 per cent). The mean length of the time interval between baseline and post-measurement (= length of DTC programme) was 7.1 months ($SD = 3.175$, range = 3.3-17.2). About half of the participants (51 per cent) were heroin users, 37.3 per cent were stimulant users and 5.9 per cent were marijuana users.

In Table I the baseline characteristics of the study group regarding substance use, current treatment and psychosocial variables are presented. Table I shows that slightly more than one-third of the participants (37,5 per cent) at that time received some kind of drug treatment and only few participants (5,9 per cent) were compliant with opioid maintenance treatment (OMT). Nearly all participants (93.3 per cent) had debts and slightly more than one in four were employed (27.1 per cent). There was insufficient information available in the files regarding mental[2] and or physical[3] health problems and regarding receiving mental[4] or physical[5] health care.

Psychosocial functioning of the Ghent DTC clients at the end of their programme

The outcomes of the Ghent DTC group are presented in Table II. At post-measurement, significantly more participants were compliant with OMT and significantly more participants participated in other types of drug treatment when compared to baseline. In addition, more participants were employed and received financial counselling at post-measurement. No significant differences were found for the Ghent DTC group regarding the type of substance used and regarding having a fixed residence.

There was insufficient information available in the files to perform reliable χ^2 -analyses regarding secondary alcohol use, frequency of use, method of use, currently receiving welfare for those unemployed and physical and mental health problems and care.

Discussion

Based on a study of prosecutor's files of 52 Ghent DTC clients, we aimed at examining the outcomes of the Ghent DTC programme on substance use and associated psychosocial difficulties. The results can be summarized as follows.

The Ghent DTC produces modest beneficial results on psychosocial outcomes

Significantly more Ghent DTC clients were compliant with OMT. Compliance with OMT as such is a successful outcome since several international studies show that OMT is associated with

Table I Baseline characteristics of the study group

| | Ghent DTC group (n = 52) n (%) | n ^a |
|---------------------------------------|-----------------------------------|----------------|
| <i>Type of substance^b</i> | | |
| Heroin | 26 (51%) | 51 |
| Stimulants (cocaine, speed, XTC) | 19 (37.3%) | 51 |
| Marijuana | 3 (5.9%) | 51 |
| Secondary alcohol use | 9 (30%) | 30 |
| <i>Frequency of use</i> | | |
| More than monthly | 22 (73.3%) | 30 |
| <i>Method of use</i> | | |
| Injecting | 10 (31.3%) | 32 |
| Smoking | 10 (31.3%) | 32 |
| Snorting | 8 (25%) | 32 |
| Swallowing | 4 (12.5%) | 32 |
| <i>Treatment</i> | | |
| Compliant to current OST | 3 (5.9%) | 51 |
| Current drug treatment other than OST | 18 (37.5%) | 48 |
| Current financial counseling | 24 (57.1%) | 42 |
| <i>Psychosocial outcomes</i> | | |
| Current fixed residence ^c | 29 (78.4%) | 37 |
| Current employment | 13 (27.1%) | 48 |
| Current debts | 42 (93.3%) | 45 |

Notes: ^aAmount of files in which information was available; ^bonly the substance with the most health risks was scored; ^cincarceration excluded

Table II The outcomes of the Ghent DTC group

| | Ghent DTC group (n = 52) | | | p ^a |
|--|--------------------------|---------------------------|---|----------------|
| | Baseline n (%) | Post-measurement n (%) | Files in which information was available n (%) | |
| <i>Type of substance^b</i> | | | | |
| Heroin | 19 (55.9%) | 15 (44.1%) | 34 (65.4%) | 0.166 |
| Stimulants (cocaine, speed, XTC) | 10 (29.4%) | 5 (14.7%) | 34 (65.4%) | 0.060 |
| Marijuana | 2 (5.9%) | 3 (8.8%) | 34 (65.4%) | 0.469 |
| <i>Treatment</i> | | | | |
| Compliant to current OST | 3 (8.8%) | 7 (20.6%) | 34 (65.4%) | 0.015 |
| Current drug treatment other than OST | 15 (38.5%) | 24 (61.5%) | 39 (75%) | 0.001 |
| Current financial counselling | 19 (59.4%) | 27 (84.4%) | 32 (61.5%) | 0.004 |
| <i>Psychosocial outcomes</i> | | | | |
| Current fixed residence ^c | 27 (81.8%) | 28 (84.8%) | 33 (63.5%) | 0.384 |
| Current employment | 13 (31.7%) | 21 (51.2%) | 41 (78.8%) | 0.007 |
| Current debts | 34 (97.1%) | 32 (91.4%) | 35 (67.3%) | 0.046 |

Notes: ^aThe non-parametric one sample χ^2 -test does not calculate the value of χ^2 , nor degrees of freedom.
^bOnly the substance with the most health risks was scored. Four participants were abstinent at the time of the post-measurement. ^cIncarceration excluded

crime reductions (Schwartz *et al.*, 2009), fewer health risks (Keen *et al.*, 2003), lower morbidity and mortality (Moller *et al.*, 2009), reductions in heroin use (Amato *et al.*, 2005) and in other illegal substance use (Masson *et al.*, 2004), increased treatment retention (Amato *et al.*, 2005) and ameliorated quality of life regarding education, employment and housing (Vanagas *et al.*, 2010). Next, significantly more Ghent DTC clients received drug treatment other than OMT. In addition, significantly more Ghent DTC clients received financial counselling and/or were employed at the end of their DTC programme. The positive outcomes of the Ghent DTC regarding referrals to drug treatment and financial counselling services and regarding employment, illustrate that the Ghent DTC does not limit its focus to substance use, but also considers co-occurring psychosocial problems, such as financial and vocational problems. Substance users regard employment and financial autonomy as important contributors to their quality of life as well (De Maeyer *et al.*, 2011), and quality of life is strongly related to recovery from substance use (Laudet, 2008; Laudet and White, 2008; Laudet *et al.*, 2009). Additionally, employment is associated with a reduction in recidivism (Skardhamar and Telle, 2012). The latter was substantiated by the results from the Ghent DTC recidivism study that showed a beneficial outcome of the Ghent DTC on reoffending rates. While the reoffending rate of about 20 per cent of the DTC clients increased during the first 18 months after the DTC trajectory, it was significantly reduced in the remaining 80 per cent. In all, 75 per cent of the latter DTC clients did not reoffend during the follow-up period, the remaining 25 per cent reoffended less (De Keulenaer and Thomaes, 2013).

A significant reduction in substance use was not observed in the study sample after a DTC programme of on average seven months. One could question why the reduction in offending was not accompanied by reduced substance use. Several explanations can account for these seemingly contradictory results. First, the reduction in reoffending can be associated with the higher participation in drug treatment and financial counselling and with more employment; as has been found in other studies (De Wree *et al.*, 2009; Gossop *et al.*, 2005; Skardhamar and Telle, 2012). Second, in a follow-up study of the Ghent DTC (De Keulenaer and Thomaes (2013) recidivism was measured in the 18 months following the final DTC hearing, while in the present study the post-measurement coincided with the final DTC hearing, which on average took place seven months after the start of the DTC programme. Different results could have been found if a follow-up measurement had been carried out 18 months after the final DTC hearing. Third, and related to the previous explanation, the DTC programme is deemed successful if a DTC client is embedded in a care and support network rather than when he/she achieves abstinence. As a result, in most cases drug treatment is not completed at the time of the final DTC hearing.

Research findings show that a longer retention period is associated with more favourable and enduring outcomes (Hser *et al.*, 2001; Marlowe, 2003; McLellan *et al.*, 2000). Fourth, the absence of sufficient information on frequency and method of use can also contribute to the lack of significance regarding substance use. Indeed, the type of substance use is only a rough operationalization of substance use. Information on frequency and method of use could have resulted in more relevant and valuable findings.

Lack of information on psychosocial outcomes of DTCs

It has been established in previous studies that DTC research often suffers from a lack of information when outcome variables other than criminal offending and substance use are studied. It seems that only these variables are regularly and consistently registered in judicial databases (Belenko, 2001; Wittouck *et al.*, 2013). In the present study a deficiency in data on substance use characteristics and other psychosocial outcomes was also observed. This limited the outcome variables of the study.

With respect to substance use variables, as was expected, the type of substance used was often registered in the judicial files. The frequency of use and the method of use was often missing though, although these variables also attribute to the severity of substance use (Blanken *et al.*, 1994). In addition, alcohol use was hardly registered in the judicial files studied, despite the well-established link between drug and alcohol use (Burns and Teesson, 2002; Byqvist, 2006; Degenhardt and Hall, 2003; Stinson *et al.*, 2005) and between (violent) crime and alcohol use (Boden *et al.*, 2013; Lundholm *et al.*, 2013; Plattner *et al.*, 2012).

With respect to other psychosocial outcomes, the housing situation, employment, financial issues and financial counselling are registered in the majority of the files. Although these variables are regarded as important contributors to recovery and desistance[6] processes (Best *et al.*, 2008; De Maeyer *et al.*, 2011; De Wree *et al.*, 2009) and are desired by drug users themselves (De Maeyer *et al.*, 2009), they can also be regarded as socially desired variables. The public protection's focus on these latter variables can explain their more frequent recording when compared to variables which are considered to be guided by a client centred orientation, such as physical and mental health and family and social relations. Despite the fact that one of the working principles of the Ghent DTC is that a trajectory is based upon the needs identified by the DTC client, the registration illustrates that the focus of the DTC programme is still focused on outcomes of a primarily public interest. It might be that the Ghent DTC, which is based on US DTCs, adopted the US DTCs' focus on substance use and criminal offending. Indeed, Wenzel *et al.* (2004) found that treatment and counselling services other than drug treatment services were only sparsely provided in these US DTCs. To study the outcomes of DTCs on substance use and psychosocial functioning of DTC clients more profoundly and in more detail, a clear and uniform registration system regarding these outcomes should be developed.

Integrating a client centred orientation in DTCs

Since the therapeutic jurisprudence movement continues to expand, discussion regarding how to integrate a client centred orientation into DTC practice is vital. Overall, the reaction of the CJS to offenders with special needs depends on which values and consequently which goals take priority in the CJS. In particular, in the court reaction to these offenders, there is a basic conflict between measures directed to the social good and to the individual good, in this case presented in the balance of the protection of society vs the treatment needs of the individual (Erickson and Erickson, 2008). The protection of society is attributed a higher value in the CJS; consequently, clients' treatments goals need to be pursued within this context (Masters, 2004). As opposed to some authors who stress the importance of distinguishing the goals and the roles of (drug) treatment services and the CJS (Bull, 2005; Edmunds *et al.*, 1999; Squirrell, 2007; Vander Laenen, in press), others suggest that (drug) treatment services and the CJS have a common goal. This common goal logically justifies a transparent information exchange of client data (Wenzel *et al.*, 2001). The communality of goals is clearly the case for the US DTC's, where the treatment services are integrated within the CJS (Vlcičá *et al.*, 2010). Alternatively, as is the case in the Ghent DTC, a cooperation between autonomous treatment services and the CJS can be developed in which both actors respect each other's divergent goals and limit the exchange of

information to a well-defined minimum (Bull, 2005; Stevens *et al.*, 2005a, b). In this respect, one can question whether the CJS should be informed on each of the psychosocial variables targeted during treatment, even if they are part of the assessment at the start of a DTC trajectory. This would lead to an undue expansion of the net of social control of the CJS (Garland, 1997; Rodger, 2012).

Study limitations

The present study suffers from several limitations which should be taken into account when interpreting and generalizing the research findings. First, the study concerns a retrospective file study. Data collection were thus carried out using secondary data. Although this approach is time and cost efficient it is also associated with disadvantages. Since the data were not primarily recorded for the purpose of scientific research, the required (detailed) information needed for a research study can be biased or incomplete (Boslaugh, 2007). This was indeed the case in the present study, as discussed in more detail above. Next, relying on secondary data caused data attrition from baseline to post-measurement. It is plausible that missing data at post-measurement was associated with programme adherence (i.e. successful implementation of the treatment plan vs early termination of the DTC programme) or program content (i.e. the goals set in the treatment plan are dependent on the individual situation of the DTC client), which obviously could have influenced the study findings. The reasons for attrition from baseline to post-measurement in individual cases were impossible to detect because of the lack of a clear and uniform registration system at the public prosecutor's office, thus precluding a single strategy to handle missing data. Therefore, intent-to-treat analyses were considered inappropriate because this could have inflated the significance of the results. Since the study already suffered from limitations regarding the availability of information, performing conservative analyses was considered suitable. Second, a one sample pre-post-study design was used. The lack of a control group implies that we cannot abstract from influencing factors. The study findings cannot be fully attributed to the intervention studied and could be explained by factors other than the Ghent DTC programme (Granfield and Cloud, 2001). We considered this design a good alternative. However, because it is longitudinal and allows outcomes to be studied in existing services and under day-to-day circumstances. Third, conclusions regarding the long-term outcomes of the Ghent DTC cannot be made since only post-measurement results were studied, as is again often the case in DTC research in general (Wittouck *et al.*, 2013). Fourth, the study sample was small and it is unclear if the sample is representative for the Ghent DTC client population, which obviously further hinders the generalizability of the study findings. Considering these limitations, it should be clear that the present research findings are preliminary and that future research is warranted to confirm or refute these findings.

Conclusion

To conclude, the Ghent DTC produces beneficial short-term outcomes regarding referring clients to drug treatment and financial counselling services and regarding employment. Nevertheless, outcomes regarding more client centred variables, such as health and social relations, remain unknown. DTC research in general suffers from a lack of information on these client centred variables which can be explained by the CJS's focus on public protection. Therefore, DTC researchers should gather data through DTC clients and treatment services rather than solely relying on judicial databases and judicial documents. Future studies are warranted to repeat and extend the present study results. In particular, client centred outcomes and long-term outcomes should be addressed by these future studies.

Next, since the therapeutic jurisprudence movement continues to expand, discussion regarding the roles and tasks of the CJS as well as treatment and counselling services is vital. Each actor should maintain its own role and tasks, regarding monitoring and substantive work, to ensure a "problem solving approach" in line with the recovery philosophy.

Notes

1. Physical health, education or employment, alcohol use, substance use, police and judicial contact, family and social relations and mental health.
2. Information available for 17.3 per cent ($n = 9$) of the participants.

3. Information available for 55.8 per cent ($n = 29$) of the participants.
4. Information available for 11.5 per cent ($n = 6$) of the participants.
5. Information available for 19.2 per cent ($n = 10$) of the participants.
6. Desistance is a concept developed in criminology to explain changes in criminal behaviour. Desistance can be defined as a dynamic and gradual process resulting in the termination of a criminal career (Laub and Sampson, 2003; Maruna, 2001). This process can be influenced by turning points which can be described as "alterations or deflections in a long-term pathway or trajectory that was initiated at an earlier point in time" (p. 16), for example marriage or employment (Sampson and Laub, 2005).

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Further reading

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About the authors

Ciska Wittouck has Master's in Clinical Psychology and in Criminology. She currently works as a PhD Candidate in the Department of Psychiatry and Medical Psychology and the Department of Penal Law and Criminology at the Ghent University in Belgium. Her research interests are forensic mental health and forensic psychiatric assessment. Ciska Wittouck is the corresponding author and can be contacted at: Ciska.Wittouck@UGent.be

Anne Dekkers has Master's in Educational Sciences. She is teaching and research assistant in the Department of Special Education (Orthopedagogics), Ghent University, Belgium. For her PhD-research, she is focusing on addiction recovery and recovery capital.

Wouter Vanderplasschen has Master's and PhD in Educational Sciences. He is a Lecturer in Special Education (Orthopedagogics) at the Ghent University, Belgium. His research focuses on addiction recovery and recovery-oriented interventions.

Freya Vander Laenen is a Professor in the Department of Penal Law and Criminology at the Ghent University in Belgium. She is the Co-Director of the Institute for International Research on Criminal Policy (IRCP). Her research domains are drug policy, inter-agency collaboration, forensic mental health and qualitative methodology.

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