Belgian Science Policy

Feasibility study on the evaluation of treatment services for dually diagnosed patients.

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National and international policymakers argue that a reduction in negative effects of substance use as well as a reduction in problematic substance use is necessary (Beleidsnota van de federale regering in verband met de drugproblematiek (2001) – European union strategy on drugs 2000-2004[1]). These targets will be achieved through the following strategies:

1. Prevention.
2. The care for and the (re)integration of problematic users.
3. Repressive measures against producers and dealers.

The creation of innovative and specific treatments for specific patient samples (e.g., dually diagnosed patients) is part of the second strategy. Since there is no consensus on the effectiveness of these treatments, there is an urgent call for further evaluation research (Beleidsnota van de federale regering in verband met de drugproblematiek (2001) – European union strategy on drugs 2000-2004[2]).

The present research project is a preliminary study for an overall evaluation study on the effectiveness of residential standard and integrated treatments for dually diagnosed patients. Based on the existing scientific literature and our own experiences in national and international treatment programs, we will advice on the necessity and the feasibility of a Belgian evaluation research. After a thorough consideration of the existing research findings, we will then propose a research protocol.

Part A: Research on the feasibility of a Belgian evaluation research project.

Part A gives an overview of the existing scientific literature on dually diagnosed patients, on integrated treatment programs and on the (superior) effectiveness of integrated treatment programs in residential settings.

1. Dually diagnosed patients.

The present research team only studies dually diagnosed patients with coexisting severe psychotic and substance use disorders. Research shows that 10 to 65 percent of the psychotic patients also has a substance use disorder (e.g., Kavanagh et al., 2002).

Dually diagnosed patients are usually young, single, poorly educated and unemployed men with pronounced social and sexual deficits[3] (e.g., Dixon et al., 1991; Gearon et al., 2001; Salyers & Mueser, 2001; Cantwell, 2003). Their living and housing environment is unstable (e.g., Kavanagh et al., 2002).

[1] European Monitoring Centre for Drugs and Drug Addiction & Europol (1999).
[2] Ib. 1.
[3] The social and sexual adjustment of psychotic patients is worse than the social and sexual adjustment of dually diagnosed patients.

Given the fact that dually diagnosed patients have comorbid psychotic and substance use disorders, it is not surprising that they present symptoms of 'psychotic' and of 'addicted' or 'dependent' patients[4]. The interaction between these two disorders results in some additional phenomena (e.g., Negrete, 2003). These patients usually have an earlier age of onset (e.g., Swofford, 2000), an earlier age at first psychiatric hospitalization (e.g., Salyers & Mueser, 2001), and a more severe psychopathology than psychotic patients (e.g., Margolese et al., 2003)[5]. The substance use also influences the treatment of the psychotic disorder. Compared to psychotic patients, they are more dependent on the mental health and addiction care (higher treatment cost – e.g., Mueser et al., 1992), they more frequently leave the inpatient setting against medical advice and they are less compliant with medication (e.g., Kavanagh et al., 2002). The above-mentioned findings imply that dually diagnosed patients tend to relapse more often/sooner than psychotic patients (e.g., Junghan et al., 2002)[6].

Dually diagnosed patients not only present a psychiatric comorbidity, they also present a medical, forensic[7] and cognitive comorbidity. This means that the substance use may indirectly/directly cause several medical conditions such as lung cancer, diabetes, etc. (e.g., US Department of Mental Health and Human Services, 1994). Secondly, it may lead to a heightened impulsivity which probably causes violent behavior, either directed to themselves or others (e.g., Ries et al., 2000). Finally, the substance use may lead to a further deterioration of the existing cognitive dysfunctions (e.g., information processing problems, memory problems, executive dysfunctions – e.g., Gearon et al., 2001).

2. ***Integrated treatments.***

The treatment of dually diagnosed patients can be sequential, parallel or integrated. In view of the present research assignment only integrated treatment programs will be considered. In case of an integrated treatment program both psychotic and substance use disorders are consistently and simultaneously treated by a multidisciplinary and cross trained team (e.g., Polstra, 1999). Each integrated treatment program can be seen as a combination of two or more of the following components.

a. *Specialised assessment.*
   Therapists not only examine life-threatening medical, psychological and/or social conditions (acute assessment), they also produce definite diagnoses (screening and diagnosis) (e.g., Todd et al., 2002).

[4] These patients have a psychotic disorder. This means that even a slight to moderate use of substances produces similar consequences as an addiction or dependence (super sensitivity model) (e.g., RachBeisel et al., 1999).

[5] Since the research on the negative symptoms is inconclusive, the team only refers to positive symptoms.

[6] Even dually diagnosed patients, who are compliant with medication relapse frequently and soon (Hunt et al., 2002).

[7] Researchers often point to the fact that dually diagnosed patients show a good premorbid social functioning despite their violent behaviour (*dual diagnosis paradox* – e.g., Penk et al., 2000).

b. *Outreaching work.*
The combination of intensive case management (integration and continuity of care) and assertive outreach (practical aid in their every day lives) enables the creation of a therapeutic relationship (Drake et al., 2001).

c. *Motivational interviewing.*
Therapists try to enlarge patients' intrinsic motivation to change maladaptive behaviors by means of microskills (e.g., reflective listening) and motivational strategies (e.g., decisional balances) (Martino et al., 2002).

d. *Individual and group counseling.*
Patients are treated to maximize their personal growing process (e.g., Drake et al., 2001).

e. *Pharmacological treatment.*
Well initiated and well performed pharmacological treatments help to stabilise the acute crisis, to support the withdrawal, to support abstinence and to treat psychotic disorders (e.g., Dom, 2000).

f. *Psychoeducation.*
Informing patients, family and friends about their psychiatric disorders (psychotic/substance use disorders) and the negative consequences of these disorders (e.g., Ryglewicz, 1991).

g. *Long-term perspective.*
Because of the chronic and fluctuating character of psychotic and substance use disorders, patients need to take part in long-term interventions (e.g., Mueser et al., 1997).

h. *Stage-wise treatment*[8].
First therapists try to create a strong therapeutic relationship (engagement). Second they try to enlarge the motivation to change maladaptive behavior (persuasion). Third they help patients to implement these changes (active treatment). Fourth they inform the patients about their constant risk for relapse (relapse prevention – e.g., Department of health, 2002).

i. *Social network factors.*
The relationship between the social network and the treatment team is twofold since the treatment team relies on the social network (e.g., information exchange during the assessment process – practical aid) and the social network relies on the treatment team (counseling – psycho education – e.g., Nikkel & Coiner, 1991).

3. *Effectiveness of residential integrated treatments.*

This chapter gives an overview of the existing scientific research[9] on residential integrated treatment programs.

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[8] The treatment phases are in accordance with the motivation phases (Negrete, 2003). They also structure the treatment process (e.g., Noordsy & Fox, 1991).

[9] In case of a non-experimental research design (single-cohort pretest-posttest comparison) only one group of patients is examined. In case of a quasi-experimental research design (non-equivalent comparison group strategies) the treatment results of several non-equivalent non-randomised groups are compared. In case of an

Non-experimental research showed that the psychopathology of dually diagnosed patients who participated in a residential integrated treatment, evolved positively. Moggi et al. (1999a; 2002) found a marginal significant to significant decrease in positive, anxiety and depressive symptoms. Negative symptoms did not significantly decrease. The research findings on substance use disorders were less conclusive: Bartels & Drake (1996; see Drake et al., 1998) and Moggi et al. (1999a) concluded that there were no significant treatment effects on substance use outcome variables, while Ries & Ellingson (1990; see Drake et al., 1998) and Moggi et al. (2002) reported some qualitative and quantitative changes in substance use. At follow-up patients were as frequent (Bartels & Drake, 1996; see Drake et al., 1998), or less frequent (Moggi et al., 2002) hospitalized. They were significantly less homeless (Moggi et al., 1999a; 2002) and without income (Moggi, 1999a).

Quasi-experimental research showed that dually diagnosed patients who did participate in a residential integrated treatment program were more likely to be motivated than patients who did not participate in a residential integrated treatment program. This is true for therapy compliance (Drake et al., 1997; Brunette et al., 2001) and behavior changes (Drake et al., 1997). The psychiatric (Blankertz & Cnaan, 1994; Moggi et al., 1999b) and substance use disorders (Blankertz & Cnaan, 1994; Drake et al., 1997; Brunette et al., 2001) also evolved positively. Those who did participate in a residential integrated treatment program had a significantly greater therapeutic effect than those who did not participate in a residential integrated treatment program (Blankertz & Cnaan, 1994; Moggi et al., 1999b; Brunette et al., 2001)[10], resulting in a decrease in inpatient admissions after discharge (Moggi et al., 1999b). The research findings also indicated that the residential integrated treatment programs did significantly better in improving the housing (Drake et al., 1997; Brunette et al., 2001) and occupational status (Moggi et al., 1999b) than did the other programs.

DiNitto et al. (2002 – experimental research) concluded that their residential integrated treatment program did not significantly affect the psychopathology, substance use, inpatient admissions, medication intake and imprisonment. These research findings are not in accordance with the research findings of Burnam et al. (1995 – experimental research). These researchers concluded that their patients[11] did significantly improve on psychopathology, substance use and housing status. In contrast to DiNitto et al. (2002) and Burnam et al. (1995) and Herman et al. (2000 – experimental research) concluded that patients who participated in a residential integrated treatment program did significantly better than patients who participated in a standard treatment program.

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experimental research design (randomised comparison group design) the treatment results of equivalent randomised groups are compared (Speer, 1998).

[10] Drake et al. (1997) concluded that all patients used significantly less alcohol and/or drugs at discharge. Those who participated in a residential integrated treatment program showed a significantly greater decrease in alcohol use than those who participated in a parallel treatment program. This finding could not be replicated in the drug use condition.

[11] Burnam et al. (1995) made three groups of patients. The first group participated in a residential integrated treatment program, the second in an outpatient integrated treatment program. The third group was not treated.

Herman et al. (2000) stated that those who participated in a residential integrated treatment program had significantly more knowledge on alcohol use disorders. They were significantly more motivated to stay abstinent (e.g., they wanted to participate in AA-meetings, etc.). At follow-up (two months after discharge) they used significantly less alcohol.

The integration of the above-mentioned findings leads to the following conclusions. Residential integrated treatment programs do not produce negative treatment effects but bring about several positive tendencies. Those who participated in a residential integrated treatment program were likely to be more motivated, to have less psychotic symptoms, to use fewer substances, to be less often hospitalized and to have a better housing and occupational status. These research findings let several researchers to believe that residential integrated treatment programs are indeed effective in treating dually diagnosed patients (e.g., Drake et al., 1998). Other researchers made notice of the existing research hiatuses (design, sample, variable and/or instrument selection) which might complicate the generalization of the above-mentioned findings and pointed out to the fact that few research findings have been replicated. These researchers (e.g., Ley et al., 2002) concluded that residential integrated treatment programs are not effective.

The controversy about the superior effectiveness of residential integrated treatment programs is identical to the above-mentioned controversy about the effectiveness of residential integrated treatment programs.

4. Conclusions and recommendations.

At the moment there is no coherent conclusion about the (superior) effectiveness of residential integrated treatment programs. Therefore, there is an urgent call for further innovative research. This call for further research seems to be justified since past research showed neutral or positive but no negative findings. Second, the large variability in research results can be explained by the variability in variables, instruments, protocols and designs. Third, the large variability in research results can also be seen as a confined number of clear trends (see above). Fourth the effectiveness of outpatient integrated treatment programs and integrated treatment components has been extensively demonstrated (e.g., Ho et al., 1999; Barrowclough et al., 2001; Martino et al., 2003). The following arguments are related to the specific nature of the present research, in this case the evaluation of Belgian treatment programs. Most research is restricted to the United States. The American organization and coordination of the mental health and addiction care is not identical to the Belgian organization and coordination of the mental health and addiction care. Therefore, one cannot assume that all of the above-mentioned research findings are valid in Belgium. Second, most research is not restricted to a specific sample (e.g., patients with psychotic and substance use disorders).

Moggi et al. (1999b; 2002) argued that patients with psychotic and substance use disorders benefit less from residential integrated treatment programs than other dually diagnosed patients. Therefore, they recommended treating these patients in specific units, which need to be evaluated.

The Belgian research on the effectiveness of treatments, specifically designed for dually diagnosed patients, is necessary. Based on the above-mentioned literature review and their experiences in national and international treatment services, the present research team developed the following research proposal.

Since the present research team needs to evaluate the functioning of treated dually diagnosed patients, they selected an enriched observational outcome monitoring design (el-Guebaly et al., 1999). This implies that psychiatric labels can only be assigned when patients are stable and not intoxicated (Carey, 2002). The present research team needs to use standardized instruments which can be presented during successive interviews. The team considers a process and an effect evaluation.

Since the present research is an explorative research and since the use of a confined number of variables is often seen as a hiatus, the present research team chooses to include a large number of continuous variables. The selection of the variables took place based on the above-mentioned research findings and the important comorbidity of the dually diagnosed patients (see above). The selected research instruments are valid and reliable. Most of the instruments are short and easy to interpret and administer. Each instrument can be administered several times. Because of the possible cognitive comorbidity, the present research team asks several people to judge patient's functioning (patients, personnel, family members).

Part B: Research proposal.

1. Research sample.

The participants are dually diagnosed patients, in this case patients with comorbid psychotic and substance use disorders, who are treated in residential treatment services, which offer them an integrated or standard treatment. They (male/female) are 18 to 45 years old and have been ill for at least two years. They have neither a mental retardation (IQ < 65) nor an irreversible chronic organic pathology.

2. Research protocol.

The process evaluation is based upon the careful assessment of the different treatment interventions/components. The product or effect evaluation is schematically presented in table 1, table 2 and table 3[12].

[12] Remark: the evaluation of the treatment cost is not present in these tables.

Table 1: Research variables.

Research variables.	**Research instrument.**
Demographic variables.	
Age, sex, ethnic culture, marital status, hospitalization rate/duration, housing status.	Patient file.
Education, employment, forensic comorbidity.	Addiction Severity Index (ASI) (McLellan et al., 1980).
Psychotic symptoms.	
Positive symptoms, negative symptoms.	Positive And Negative Syndrome Scale (PANSS) (Kay et al., 1986).
Thinking disturbance, withdrawal retardation, anxious depression, hostile suspiciousness, agitation excitement.	Brief Psychiatric Rating Scale (BPRS) (Overall & Gorham, 1962).
General psychopathology.	PANSS – BPRS.
Substance use.	
Substance use.	ASI – AUS[13] – DUS[14] - Drug/Alcohol 6-month follow-back calendar[15].
Readiness to change.	
Readiness to change.	Readiness to Change Questionnaire[16].
Quality of life.	
Psychosocial, motivation and energy, symptoms and side-effects.	Schizophrenia quality of life scale (SQLS) (Wilkinson et al., 2000).
Subjective quality of life.	Manchester Short Assessment of quality of life (MANSA) (Priebe, 1999).
Global functioning.	
Severity of illness, global improvement, efficacy index.	Clinical Global Impressions (CGI) (Guy, 1976; zie Schutte & Malouff, 1995).
Psychological, social and occupational functioning.	Global Assessment of Functioning Scale (GAF)(Goldman et al., 1992).
Familial functioning.	
Problem solving, communication, roles, affective responsiveness, affective involvement, behavior control, and general functioning.	McMaster Family Assessment Device (Epstein et al., 1983; zie Schutte & Malouff, 1995).

[13] Alcohol Use Scale (AUS) (Drake et al., 1990).
[14] Drug Use Scale (DUS) (Drake et al., 1990).
[15] Drug/alcohol 6-month follow-back calendar (Dartmouth Psychiatric Research Center, 2001).
[16] Readiness to Change Questionnaire (RTQ) (Rollnick et al., 1992).

Table 2: Research schedule[17].

	X_0	X_1	X_2	X_3
Patients.				
PANSS	X	X	X	X
BPRS	X	X	X	X
ASI	X	X	X	X
TLFB	X		X	X
SQLS	X	X	X	X
MANSA	X	X	X	X
RCQ	X	X	X	X
Staff.				
GAF	X	X	X	X
CGI			X	X
AUD	X	X	X	X
DUD	X	X	X	X
Family members.				
MFAD	X	X	X	X

A treatment is successful if there is a significant improvement on one or more of the above-mentioned variables (inter subject comparison). Treatment A is more effective than treatment B if treatment A produces significantly better results than treatment B (between subject comparison).

[17] X_0: treatment onset – X_1: 3 months after X_0 – X_2: 6 months after X_0 – X_3: 12 months after X_0.

Table 3: Research variables staff (6-month administration).

Research variables.	**Research instruments.**
Job stress & work satisfaction.	
Managing the workload 1 & 2, organizational support and involvement, dealing with patients and relatives, home/work conflict, confidence and competence in role.	Nurse Stress Indes (NSI) (Harris, 1989).
Skill discretion, decision authority, task control, work and time pressure, role ambiguity, physical exertion, hazardous exposure, job insecurity, lack of meaningfulness, social support supervisor, social support coworkers, job satisfaction.	Leidse Arbeidskwaliteitsschaal (LAKS) (Van der Doef & Maes, 1999).
Somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism.	Symptom Checklist-90 (SCL-90) (Arrindell & Ettema, 1986).

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