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## Histories of Social Functioning and Mental Healthcare in Severely Dysfunctional Dual-Diagnosis Psychiatric Patients

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1 **Histories of Social Functioning and Mental Healthcare in**  
2 **Severely Dysfunctional Dual-Diagnosis Psychiatric Patients**

3

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26 **Abstract**

27 Disengagement from mental health services is a major obstacle to the treatment of homeless  
28 dual-diagnosis patients (i.e. those with severe mental illness and substance-use disorder). A  
29 subgroup of these patients is considered to be treatment resistant and we aim to explore  
30 whether patients' reasons for disengagement may stem from negative experiences in their  
31 lives and treatment histories. This retrospective, explorative study examined the medical files  
32 of 183 severely dysfunctional dual-diagnosis patients who had been admitted involuntarily to  
33 a new specialized clinic for long-term treatment. Most patients shared common negative  
34 experiences with respect to childhood adversities, low school achievement, high levels of  
35 unemployment, discontinuity of care and problems with the judicial system. The lifetime  
36 histories of treatment-resistant, severely dysfunctional dual-diagnosis patients showed a  
37 common pattern of difficulties that may have contributed to treatment resistance and  
38 disengagement from services. If these adversities are targeted, disengagement may be  
39 prevented and outcome improved.

40

41

42 **Keywords:** Severely mentally ill, Dual diagnosis, Treatment resistance, Difficult-to-engage,  
43 Compulsory treatment, Homeless.

44

45 **Introduction**

46 Drake, Osher and Wallach (1991) drew attention to a very vulnerable group of homeless  
47 people who had been dually diagnosed with severe mental illness (SMI) and substance-use  
48 disorder. Many of these people also had somatic illnesses, legal problems, behavioural  
49 problems, skill deficits, histories of trauma and inadequate support systems. The authors  
50 concluded that this group of patients has complex and poorly understood needs.

51 More recent studies have described a subgroup of dual-diagnosis patients with similar  
52 traits, characterizing them as ‘difficult-to-engage’, ‘therapy resistant’ or ‘non-responders to  
53 treatment’ (Smith, Easter, Pollock, Pope & Wisdom, 2013; Mulder, Torleif, Bahler, Kroon &  
54 Priebe, 2014). While many of these patients are homeless or in prison, they are in great need  
55 of psychiatric care, addiction care and somatic care and also in need of care by the social  
56 services (Schanda, Stompe & Ortwein- Schwoboda, 2013).

57

58 **Limitations in Dual-Diagnosis Treatment**

59 In the 1980s Drake and Wallach (2000) introduced the term ‘dual diagnosis’ and raised  
60 awareness of substance use by people with severe mental illness (SMI). Due partly to the  
61 separation of psychiatric services and addiction services in many countries, the complex  
62 negative interaction between substance use and SMI was long overlooked. However, the poor  
63 treatment outcomes in the two separate services led to innovations in the treatment of dual-  
64 diagnosis patients, for whom mental health and substance- abuse treatment were combined in  
65 what was termed Integrated Dual Diagnosis Treatment (IDDT) (Kruszynski, Boyle, 2006).

66 Similarly, to improve the engagement and treatment of dual-diagnosis patients, several new  
67 kinds of intervention and programme were developed, including assertive outreach,

68 motivational interventions, residential programmes, inpatient treatment and housing projects  
69 (Planije, Van Rooijen & Kroon, 2006).

70 Despite these innovations, at least 50% of these patients do not respond well to outpatient  
71 IDDT or to other outpatient psychosocial treatments (Brunette, Mueser & Drake, 2004;  
72 Drake, Mueser, Brunette & McHugo, 2004). This may be partly because they lack safe and  
73 stable living arrangements: many are homeless or live in neighbourhoods that are affected by  
74 drug abuse (Brunette, Mueser & Drake, 2004).

75 In 2006 the Netherlands' national government started an active programme to address the  
76 needs of homeless people. Although a small subgroup of homeless people were well known to  
77 the mental- healthcare services, they were considered to be treatment resistant: over the years  
78 they had been treated by all available means - including frequent compulsory hospital-  
79 admissions - without lasting improvements. Most of them were at risk of severe self-neglect  
80 and social deterioration, and they caused nuisance in the streets. In 2006 the government  
81 decided to build a new and unique treatment facility for them.

82 To develop and improve the treatment, we wished to gain insight into the characteristics of  
83 this group of patients, including their life-time history of social functioning and their previous  
84 use of mental-health services.

85

## 86 **Aim of the Study**

87 To analyse the life courses and mental-healthcare histories of a group of severely  
88 dysfunctional dual-diagnosis patients, considered by the current services to be treatment  
89 resistant but also to be at risk of lasting danger to themselves or others,  
90 in order to explore whether patients' reasons for disengagement may stem from negative  
91 experiences in their lives and treatment histories.

92

93 **Methods**

94

95 **Design and Setting**

96 This retrospective study was based on the medical files of all patients who had been  
97 admitted involuntarily between 2007 and 2013, to a special facility for dual-diagnosis  
98 patients.

99 The patients included in this study had been referred by the municipal health authorities of  
100 three major Dutch cities (Amsterdam, Rotterdam and Groningen). They had lived on the  
101 streets, causing nuisance, and were considered by the available services to be treatment  
102 resistant. Ultimately they were also at high risk of severe self-neglect and social deterioration.

103 In 2006, the Dutch government decided to build ‘Sustainable Residence’ (SuRe), a new  
104 facility for these patients. On the basis of a civil-law court order, patients are admitted  
105 involuntarily to SuRe for longer periods that are determined by an independent psychiatrist  
106 and a civil-law judge. Every six or twelve months, a judge decides whether the court order  
107 should be extended.

108 Admission to SuRe is based on four criteria: (1) dual diagnosis (SMI and substance- use  
109 disorder); (2) a history of homelessness; (3) failure of earlier treatment to achieve lasting  
110 improvement despite the use of appropriate means, including multiple involuntary  
111 admissions; (4) the imposition of a civil-law court order for involuntary admission on the  
112 basis of the risk of lasting danger towards themselves or others.

113 The patient sample for the current study, comprised all the patients admitted to SuRe  
114 between 2007 (its start of operations) and 2013. The study was approved by the Dutch  
115 Medical Ethical Committee for the Mental Health Services.

116

117 **Materials**

118 We studied the files of patients admitted to SuRe. These included referral letters, court orders,  
119 treatment reports, personal interviews, and interviews with family members. Information was  
120 also gathered by social workers and a cultural anthropologist working at SuRe, who collected  
121 information from family members on the patients' overall and cultural backgrounds, including  
122 information on the patients' family system, and on their childhood, school and job history.

123 To collect standardized information on the life and mental healthcare history from these  
124 files, we developed a case-record form with clear definitions of the variables to be assessed.

125 A research team screened the files for facts about these variables and scored them on the  
126 form. When information in a file was not coherent or not available for a variable it was scored  
127 as 'missing' data.

128

129 **Variables**

130 We studied the patients' life and mental-healthcare histories in three domains: (1) childhood  
131 functioning (up to 18 years of age); (2) social functioning (18 years and above); and (3)  
132 lifetime care-histories in mental health. The items in these domains were selected on the basis  
133 of their potential risk to or protective influence on the patient's social and psychological  
134 functioning.

135 For the first domain (the childhood period) we selected items on: - family structure  
136 (including parental loss, i.e. parental divorce, parental death and court custody, or caretaker  
137 with mental, addiction or judicial problems); - other childhood adversities (including  
138 migration or physical or sexual abuse); - educational achievement, drug and /or alcohol use,  
139 behavioural problems and contacts with professional care (e.g. youth or social care) or the  
140 judicial system.

141 For the second domain (the history of social functioning), we collected data on:  
142 employment history, living arrangements (including having lived independently and history  
143 of homelessness), financial problems, having children, and contact with the police or judicial  
144 system (including detention history).

145 For the third domain (mental-health history - before admission to SuRe) we established the  
146 age at onset of psychiatric and addiction problems, age at first contact with the services, the  
147 number of voluntary and compulsory admissions, and periods of care in which functioning  
148 appeared to be stable ( including history of supported housing or supported independent  
149 living).

150 As many patients had had unsettled lives, they often lose contact with mental health  
151 services and consequently the information in their patient files was not complete for some of  
152 the variables we studied.

153 Similarly, information on the patients' judicial history kept by the police and the  
154 Department of Justice had been only partly documented and neither organization gave us  
155 permission to access its files.

156

157

## 158 **Results**

159 We examined the files of all 183 patients admitted to the treatment programme at SuRe  
160 between 2007 and 2013. Table I shows the demographic and clinical characteristics of the  
161 study sample.

162

163



164 **Table I.** Demographic and clinical characteristics of severely  
 165 dysfunctional and treatment-resistant dual-diagnosis patients  
 166 admitted to Sustainable Residence between 2007 and 2013

<i>N</i> = 183	
Gender, N (%) <sup>#</sup>	
Male	152 (83.1)
Female	31 (16.9)
Age, mean (SD; range)	39.4 (8.4; 22-59)
Country of birth, N (%) <sup>#</sup>	
Netherlands	83 (46.9)
Suriname	39 (22.0)
Netherlands Antilles	14 (7.9)
Other <sup>a</sup>	41 (23.2)
<i>Missing</i>	6
Education (completed) <sup>b</sup> , N (%) <sup>#</sup>	
Low	97 (63.4)
Intermediate	48 (27.5)
High	8 (9.2)
<i>Missing</i>	30
Diagnosis at referral to SuRe, N (%) <sup>#</sup>	
DSM IV axis I	
Psychotic disorders	153 (90.0)
Substance abuse or dependence	158 (92.9)
Other axis 1 disorder	21 (12.4)
<i>Missing</i>	13
DSM-IV axis II	
Personality disorder	59 (36.4)
Borderline intellectual functioning or less (IQ < 85)	30 (18.6)
<i>Missing</i>	21
DSM-IV axis V	
GAF at admission, mean (SD; range)	35 (7.9; 15-55)
<i>Missing</i>	26

167 # Relative frequencies (excluding patients with missing values).

168 <sup>a</sup> Countries on the following continents: Africa (14.1%); Asia (5.1%), Europe (3%), South  
 169 America (1.1%), Oceania (0.6%)

170 <sup>b</sup> Low: elementary school or less. Intermediate: lower or intermediate vocational or general  
 171 education. High: higher vocational or university education.

172

173

174 The study sample was predominantly male and represented a wide age range (from 22 to 59  
175 years). Over half the patients had been born outside the Netherlands and had a low  
176 educational level (elementary school or less). Upon referral to SuRe they had, almost without  
177 exception, been diagnosed with a psychotic disorder, particularly paranoid schizophrenia  
178 (58.2%) and disorganized schizophrenia (15.0%). In addition, almost all had a substance use  
179 or dependence disorder (92.9%), usually involving multiple drugs. The substances most used  
180 were cocaine (38.8%), cannabis (32.9%) and alcohol (22.4%). Eighty-four percent of the total  
181 sample (142 patients) had a combination of a psychotic and substance-use disorder. In a few  
182 cases (12.4%) other axis I disorders were stated, including mood disorders and substance-  
183 induced disorders. About one third of the patients also had a personality disorder: in 13.6%  
184 this consisted of an Antisocial Personality Disorder and in 16.7% it was Personality Disorder  
185 Not Otherwise Specified. A substantial proportion of the patients had borderline intellectual  
186 functioning or less (defined as an IQ less than 85). Overall, patients' psychosocial functioning  
187 was poor, with a mean GAF score of 35 at referral to SuRe.

188

### 189 **Childhood Functioning**

190

191 Table II shows the childhood experiences of the patients.

192

193

194 **Table II.** Childhood experiences of severely dysfunctional and treatment-  
 195 resistant dual-diagnosis patients admitted to Sustainable Residence  
 196 between 2007 and 2013

		<i>N</i> = 183
Childhood adversities <18 years, N (%) <sup>#</sup>		
Parental loss <sup>a</sup>		105 (69.5)
<i>Missing</i>		32
Abuse (physical or sexual)		53 (51.5)
<i>Missing</i>		80
Caretaker's mental illness/ substance abuse/ criminality		50 (65.8)
<i>Missing</i>		107
Migration <18 years		77 (46.7)
<i>Missing</i>		18
Any childhood adversity		142 (92.8)
<i>Missing</i>		30
Onset of alcohol or drug use <18 years, N (%) <sup>#</sup>		
<i>Missing</i>		54
Behavioural problems <18 years		
<i>Missing</i>		61
Contact with professional care <18 years <sup>b</sup> N (%) <sup>#</sup>		
<i>Missing</i>		70

197 # Relative frequencies (excluding patients with missing values).

198 <sup>a</sup>Parental death, parental divorce, and other loss of contact with parents or caregivers.

199 <sup>b</sup>Youth care, social work, etc..

200

201

202

203 The files of over three quarters of the patients contained references to a form of childhood  
204 adversity; most had an accumulation of various types of adversity. The most prevalent being  
205 parental loss (69.5%) which included parental divorce, parental death, and court custody.  
206 Fewer than one third of the patients had been raised by both their own parents. In addition,  
207 over half had had a caretaker with mental, addiction or judicial problems, had been physically  
208 or sexually abused during childhood or had migrated before their eighteenth birthday. They  
209 had migrated at a vulnerable age (mean: 13.6 years) which may have affected their  
210 educational achievements and options for social adjustment.

211 Before age 18, over a third had had contacts with professional care services such as youth  
212 care services or social services. The reasons for these contacts lay in behavioural problems  
213 that, by that age had already started in 87.1%. 33.6% already having experienced psychiatric  
214 symptoms and 19.4% having received mental healthcare treatment. By that age 71.3% had  
215 also experienced their first drug or alcohol use.

216

## 217 **Social Functioning**

218 Table III shows the aspects of adult social functioning.

219

220

221 **Table III.** Adult social functioning and judicial  
 222 history of severely dysfunctional and treatment-  
 223 resistant dual-diagnosis patients admitted to  
 224 Sustainable Residence between 2007 and 2013

	<i>N</i> = 183
Independent housing, N (%) <sup>#</sup>	124 (81.6)
<i>Missing</i>	31
Homelessness, N (%) <sup>#</sup>	140 (90.3)
<i>Missing</i>	28
Paid job, N (%) <sup>#</sup>	107 (77.5)
<i>Missing</i>	45
Having Children, N (%) <sup>#</sup>	49 (32.2)
<i>Missing</i>	31
Detention, N (%) <sup>#</sup>	131 (87.9)
<i>Missing</i>	34

225 #Relative frequencies (excluding patients with missing values) of  
 226 patients who had experienced the phenomenon once or more during  
 227 their lifetime.  
 228  
 229  
 230

231 During adulthood most patients had lived on their own for at least a short period. Almost  
 232 all had also experienced homelessness for periods ranging from six months to five years.  
 233 Although fifteen had not been homeless, they had spent periods without accommodation of  
 234 their own in which they had been hospitalized or incarcerated, or had stayed with family. For  
 235 a period during their lifetime, most had also had a paid job. In many cases the duration of  
 236 these jobs was unknown although the information in the files suggested that it had often been  
 237 rather brief. When specified in the patient files the periods with a job had ranged from under a  
 238 month to over a year. However, most patients' working careers had lasted no longer than a  
 239 year. Only fifteen patients (10.9%) were documented to have had a paid job for five years or  
 240 more. Financial problems were mentioned in the patient files but usually without any details.  
 241 When admitted to SuRe, 79.5% had serious financial debts that amounted to a mean of 8,516  
 242 euro per patient. One third of the patients had children which may indicate a period of  
 243 relatively stable social functioning.

244 Before admission to SuRe all patients had caused serious nuisance in their surroundings;  
245 this had often ended in police intervention. Most patients had been detained once or more.  
246 Overall, their criminal activities had been related to substance use and drug dealing; these  
247 activities included substance use in public, disturbing the public order, begging, misbehaving  
248 and stealing.

249 In particular, 23.9% of the patients had been incarcerated under the Dutch Persistent  
250 Offenders Act (POA), which is intended for frequent offenders, and in practice often involved  
251 drug-related – misdemeanours. Under this Act patients had been detained for two years in a  
252 special prison facility where training programmes had been available in the first year and  
253 vocational skills had been further developed in the second.

254 The files also reported serious crimes. However, due to the lack of exact data provided by  
255 the police or Justice Department we can do no more than provide examples: stealing,  
256 burglary, aggressive behaviour, menace, violence and physical abuse.

257 By way of illustration, the two boxes provide case descriptions of typical patients who had  
258 been admitted involuntarily to SuRe in the period under study.

259

#### Patient X

This patient was born in South-America. His parents died when he was five years old and he was placed in a foster home. Due to problems with his foster-father he was finally adopted by a Dutch couple at the age of eight. In the adoptive family he was seriously physically abused; at age 11 he started to use heroine. At 12 he attempted suicide. After a long period of physical recovery, he was placed in a boarding school where his behaviour was out of control. He ran away and started a life of wandering, often in Amsterdam. Later he lived with a girlfriend. They had a baby. In this period, when he was a regular cocaine-user, he started to beat his girlfriend. Eventually he asked for help and his girlfriend went to a safe house. From then on he started to use more alcohol and drugs, which led to aggressive behaviour and paranoid symptoms. Over the next few years many attempts were made to treat him, including compulsory admissions. These did not lead to lasting improvements. For a year he lived in a supported housing facility. When he was drunk he became very aggressive; neither were outpatient care providers able to handle his dangerous behaviour. He was involved in many aggressive incidents on the street. He got infected with HIV and struggled with loneliness and hopelessness. Due to the risk of social and personal deterioration he was admitted involuntarily to SuRe.

260

#### Patient Y

Mr. Y had an overprotective mother and an alcoholic father. At elementary school he had learning problems and failed twice. At 12 he started to use cannabis and, some years later, tranquilizers. Due to aggressive behaviour, he was removed from school at 14. He then had several jobs: in an abattoir, at sea, and in gardening. When he was 16, his parents threw him out because they were unable to control his behaviour problems. He then lived on the streets for many years. He was convicted many times for criminal activities such as bicycle theft, shoplifting, begging and burglary. At 23 he was admitted to a mental healthcare clinic due to psychotic symptoms. In that period he was a regular cocaine and heroin-user. He had his first treatment in addiction care eleven years later. Repeated hospitalizations followed for his psychotic disorder (schizophrenia) and for his addiction problems. Upon discharge, he consistently returned to the streets and continued to use drugs. Over the years he was incarcerated 19 times. After his last detention, when he was 40, he was admitted involuntarily to SuRe.

261

262

263 **Mental Healthcare History**

264 One of the conditions for referral to SuRe is a ‘history of treatment by all appropriate means  
265 (including compulsory treatment)’. In this part of the study we review the patients’ mental  
266 healthcare history before their admission to SuRe. Mental healthcare includes both psychiatric  
267 and addiction services.

268 In table IV the lifetime mental healthcare history of the patients.

269

270



271 **Table IV.** Lifetime history of mental healthcare of severely dysfunctional  
 272 and treatment-resistant dual-diagnosis patients admitted to Sustainable  
 273 Residence between 2007 and 2013

	<i>N</i> = 183
Age at onset of psychiatric disorders <sup>a</sup> (mean; SD)	21.2 (7.3)
<i>Missing</i>	57
Age at onset substance use (mean; SD)	16.9 (5.9)
<i>Missing</i>	52
Age at first contact with psychiatric services, (mean; SD)	24.0 (7.6)
<i>Missing</i>	21
Age at first contact with addiction services, (mean; SD) <sup>#</sup>	30.5 (8.8)
<i>Missing</i>	35
History of mental healthcare by category, N (%) <sup>#</sup>	
Admission to psychiatric services	135 (96.4)
Admission to addiction services	71 (50.7)
Admission in forensic setting	26 (18.6)
Supported housing or supported independent living	102 (72.9)
<i>Missing</i>	43
Number of admissions to psychiatric services, N (%) <sup>#</sup>	
0	6 (3.9)
1-5 times	62 (40.0)
6-10 times	45 (29.0)
11 times or more	42 (27.1)
<i>Missing</i>	33
Number of admissions to addiction services, N (%) <sup>#</sup>	
0	74 (48.4)
1-5 times	71 (46.4)
6-10 times	6 (3.9)
11 times or more	2 (1.3)
<i>Missing</i>	30
History of compulsory admission, N (%) <sup>#</sup>	167 (96.0)
<i>Missing</i>	9

274 # (Relative frequencies (excluding patients with missing values).

275 a According to DSM-IV criteria; excluding substance abuse or dependence.

276

277

278

279 A large majority of the patients (79.2%) were reported to have had psychiatric symptoms  
280 (other than addiction) before the age of 25. The mean age at first contact with mental  
281 healthcare services (including addiction services) was 23.9 years; 79.6% had had mental-  
282 healthcare treatment before the age of 31 – meaning of course that there is also a subgroup of  
283 patients (20.4%) who had first contact with mental healthcare professionals after the age of  
284 30.

285 Almost all patients had been admitted to a psychiatric hospital. Those who had not had  
286 been in an addiction clinic. With few exceptions – i.e. patients referred to SuRe after  
287 detention - all patients had experienced involuntary admissions. Given the dual diagnoses in  
288 this patient group, there is a remarkable difference between the number admitted to  
289 psychiatric services (96.4%) and those admitted to addiction services (50.7%).

290 With regard to the lifetime duration of inpatient treatment in psychiatric or addiction  
291 services, 8.5% of the patients had been hospitalized for less than a total of 1.5 years. At the  
292 opposite end of the scale, 17.5 % had been hospitalized for more than 4 years.

293 In addition to inpatient psychiatric and addiction care, roughly one in five of the patients  
294 had experienced inpatient treatment in forensic settings due to serious criminal acts.

295 Two thirds of all patients had lived in supported housing or supported independent living,  
296 which may be taken as an indication that they also had experienced periods of relatively  
297 stable psychiatric functioning and care. Although seven patients had lived in such settings for  
298 4 - 5 years, all had been discharged due to a worsening of their psychiatric symptoms and/or  
299 addiction. In most cases, their eviction had been due to the behavioural problems that had  
300 accompanied this deterioration.

301 In summary: almost all patients had been admitted to a psychiatric and / or addiction  
302 hospital and had also experienced compulsory admissions. Only two patients had not, and had  
303 been referred to SuRe after their detention. Over half of the patients had been admitted to both

304 psychiatric and addiction clinics and had had residential care in supported housing or  
305 supported independent living.

306 The lifetime provision of treatment by Assertive Outreach Teams had not been recorded in  
307 the patient files well enough to provide specific findings over patients' lifetimes, but most  
308 patients had been in care with these teams.

309 Figure 1 summarizes the findings presented above by showing an average life trajectory for  
310 the patient group. It shows that there was a mean period of 15 years between first treatment by  
311 the mental healthcare services and admission to SuRe. Overall, between the onset of  
312 psychiatric problems and admission to SuRe there was a mean 18.4 -year period of treatment  
313 inputs, homelessness, police contacts, detentions, addiction problems and unemployment.

314

315

316 **Fig 1.** An average lifeline overview<sup>5</sup> of the developmental and care history of severely  
317 dysfunctional and treatment-resistant dual-diagnosis patients admitted to Sustainable  
318 Residence between 2007 and 2013

319

320 *Insert figure 1 here*

321

322

323

324 **Discussion**

325 This study describes the life- and mental-health-service histories of severely dysfunctional  
326 dual-diagnosis patients who showed dangerous behaviour to self or others and were  
327 considered to be treatment resistant by the current services. They had been referred to a new  
328 facility called Sustainable Residence (SuRe).

329 The life histories showed an accumulation of risk factors and losses, and hardly any  
330 protective factors. The patients had experienced many childhood adversities, had few  
331 educational achievements and had used substances before the age of eighteen. Their  
332 psychiatric problems – usually psychotic symptoms - had become apparent at around the age  
333 of 21. In approximately the same period they had showed disruptive behaviour, which in  
334 many cases led to police interventions. Most had been unable to keep a job for a longer  
335 period, and had also had financial problems. Most had been diagnosed with schizophrenia  
336 (paranoid type) and multiple substance-use disorder. The mental health histories showed a  
337 pattern either of many brief hospitalizations and crisis interventions, or of a smaller number of  
338 long hospitalizations. In neither case had there had been lasting improvements in functioning.

339 Life histories with ongoing stressful events such as found in our patient group were  
340 described by Padgett, Smith, Henwood and Tiderington (2012) as a ‘chain of risk in which  
341 one exposure tends to lead to another’. The authors hypothesized that an accumulation of  
342 adversities and life stress creates sources of emotional destabilization, many of them latent  
343 and poorly understood. This permanent emotional instability undermines the efforts of care  
344 providers to address the manifest problems, such as psychotic symptoms, homelessness and  
345 substance abuse. In the same authors view, treatment of this patient group should also address  
346 the ‘often hidden psychological burdens or traumas as well as the chronic stress of poverty  
347 and social isolation’.

348 With respect to the characteristics of the patients we studied, three deserve special  
349 attention. First, the patients' educational levels were particularly low: only 36.7% had  
350 finished secondary education, which is substantially lower than the 67.0% found in a study of  
351 homeless people in the four major cities in the Netherlands (Van der Laan, Straaten, Boersma,  
352 Schrijvers, Van der Mheen & Wolf, 2013). This raises the question of whether they had been  
353 screened properly for learning disabilities during their periods of psychiatric or addiction  
354 treatment. Early diagnosis of learning disability might improve insight into problems at  
355 school – which, if unrecognized, might otherwise spread to other domains. Although, upon  
356 referral to SuRe, only 18% of patients in our study had been diagnosed with borderline  
357 intellectual functioning or less, this diagnosis may have been unrecognized in other patients.  
358 The second characteristic that deserves attention is the fact that almost all patients had been  
359 diagnosed with a psychotic disorder - besides substance misuse or dependence. In other Dual  
360 Diagnosis clinics in the Netherlands, only 24.0% of the patients are diagnosed with a  
361 psychotic disorder (De Weert-van Oene, Holsbeek & De Jong, 2011). While substance use  
362 has a destabilizing effect on psychotic problems, some drugs can also attenuate the psychotic  
363 symptoms, thereby encouraging a patient to use substances. This can result in a circle that  
364 should be targeted in treatment.

365 The third characteristic is that substance use usually started much earlier in the patients'  
366 lives than the psychiatric problems did. Nevertheless, the mean age at which patients entered  
367 addiction care was almost seven years higher than their age at first contact with psychiatric  
368 care, and the number of admissions to addiction services was substantially lower than that to  
369 psychiatric services. This might indicate that despite the IDDT programmes, the separation of  
370 psychiatric care and addiction care is still an issue. To prevent the long care trajectories  
371 described in this article, we therefore argue that dual-diagnosis treatment for young people  
372 should be provided earlier.

373 **Limitations**

374 Our study has two major limitations. First, the data were obtained from patient files,  
375 which, by definition, had not been compiled for research purposes. These data had been  
376 collected retrospectively and were sometimes incomplete. When studying patients whose  
377 care-avoidance often causes them to lose contact with the services such problems are probably  
378 inevitable. Second, as we had received no permission to access the files of the Justice  
379 Department, our information on the patients' judicial history was incomplete.

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382 **Conclusion and Clinical Implications**

383 The life histories of this group of severely dysfunctional and treatment-resistant dual-  
384 diagnosis patients showed a common pattern of difficulties that may provide a target for  
385 prevention by mental-health and social services. A broad range of well-known risk factors had  
386 accumulated in these patients' lives. If such factors are recognized at an early stage, it might  
387 be possible to prevent 'the chain of risk' that leads to psychological conditions that can  
388 undermine the care providers' efforts.

389 The patients' mental-healthcare histories demonstrate the failure – at some expense- of  
390 many inpatient and outpatient treatment inputs. Our results therefore underscore the  
391 importance of integrated and assertive treatment, and also of continuity of care to attempt to  
392 improve patients' outcome. Better care may help to reduce the high costs not only for the  
393 mental health services but also to society as a whole (including the police and Department of  
394 Justice).

395 In the patient group we studied, fragmentary treatment efforts were succeeded by periods of  
396 homelessness, criminality, crisis interventions, imprisonment and active outreach. Reasons for  
397 dropping out of treatment are often formulated in terms of patients' disruptive behaviour.

398 Instead, it might be more helpful if the focus shifted to care providers' difficulties in forming  
399 a working alliance with them.

400 Research should therefore establish and develop the following: strategies for improving  
401 engagement of this patient group, interventions that meet their needs, and in particular,  
402 timely, effective and cost-effective, treatment programmes for dual- diagnosis patients who  
403 do not benefit from current outpatient or (assertive) outreach treatment.

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#### 406 **Abbreviations**

407 SuRe: Sustainable Residence. Facility for dual-diagnosis treatment in the Netherlands.

408 SMI: Severe Mental Illness.

409 IDDT: Integrated Dual Diagnosis Treatment.

410 POA: Persistent Offenders Act in the Netherlands.

411

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415

#### 416 **Conflict of Interest**

417 The authors declare that they have no conflict of interest.

418

#### 419 **Authors' contributions**

420 GDvK contributed to the study design, literature search, data acquisition, and interpretation of  
421 results. She was also responsible for manuscript writing and revision.

422 WJD contributed to the study design, literature search, data acquisition, interpretation of  
423 results and revision of the manuscript.

424 WGM contributed to the study design, and also revised the manuscript critically for important  
425 intellectual content.

426 GHM Pijnenborg contributed to the interpretation of results and revision of the manuscript.

427 RHSvdB was responsible for the study design, and contributed to literature search,  
428 interpretation of results and revision of the manuscript.

429 CLM was responsible for the management of the study, and contributed to the interpretation  
430 of results and revision of the manuscript.

431 All authors have read and approved the final manuscript.

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434 **References**

- 435 Brunette, M.F., Mueser, K.T. & Drake, R.E. (2004). A review of research on residential  
436 programs for people with severe mental illness and co-occurring substance use disorders.  
437 Drug and Alcohol Review, 23, 471-481.
- 438 Drake, R.E., Mueser, K.T, Brunette, M.F. & McHugo, G.J. (2004). A Review of Treatments  
439 for People with Severe Mental Illnesses and Co-Occurring Substance Use Disorders.  
440 Psychiatric Rehabilitation Journal, 27(4), 360–374.
- 441 Drake, R.E., Osher, F.C. & Wallach, M.A. (1991). Homelessness and Dual Diagnosis.  
442 American Psychologist, 46(11), 1149-1158.
- 443 Drake, R.E. & Wallach, M.A. (2000). Dual Diagnosis: 15 years of Progress. Psychiatric  
444 Services, 51(9), 1126-1129.
- 445 Laan, van der J., Straaten, B., Boersma, S., Schrijvers, C., Mheen, van der D. & Wolf, J.  
446 (2013). Cohortstudie Daklozen in de vier grote steden (Cohortstudy of the homeless in the  
447 four major cities in the Netherlands). Nijmegen: UMC St. Radboud.
- 448 Mulder, C.L., Torleif, R., Bahler, M., Kroon, H. & Priebe, S. (2014). The availability and  
449 quality across Europe of outpatient care for difficult-to-engage patients with severe mental  
450 illness: A survey among experts. International Journal of Social Psychiatry, 60(3), 304-  
451 310.
- 452 Padgett, D.K., Smith, B.T., Henwood, B.F. & Tiderington, E. (2012). Life course adversity in  
453 the lives of formerly homeless persons with serious mental illness: context and meaning.  
454 American Journal of Orthopsychiatry, 82(3), 421-430.
- 455 Planije, M., Rooijen, van, S., Kroon, H. (2006). Inventarisatie van het zorgaanbod voor  
456 dubbele diagnose cliënten in de GGZ en verslavingszorg in Nederland (Inventory of care-  
457 services for dual diagnosis clients in mental healthcare and addiction care in the  
458 Netherlands). Trimbos-Institute, Utrecht, NL.

459 Schanda, H., Stompe, T. & Ortwein-Swoboda, G. (2013). Psychiatric Reforms and increasing  
460 Criminal Behavior of the Severely Mentally Ill: Any Link? *International Journal of*  
461 *Forensic Mental Health*, 8(2), 105-114.

462 Kruszynski, R., Boyle, P.E. (2006). Implementation of the Integrated Dual Disorders  
463 Treatment Model: Stage-Wise Strategies for Service Providers. *Journal of Dual Diagnosis*,  
464 2(3), 147-155.

465 Smith, T.E., Easter, A., Pollock, M., Pope, L.G. & Wisdom, J.P. (2013). Disengagement From  
466 Care: Perspectives of Individuals With Serious Mental Illness and of Service Providers.  
467 *Psychiatric Services*, 64(8), 770-775.

468 Weert-van Oene, G.H., Holsbeek, T., De Jong C.A.J. (2011). *Monitor Dubbele Diagnose*  
469 *2011 (Monitor Dual Diagnosis 2011)*, Nijmegen: Nijmegen Institute for Scientist-  
470 Practitioners in Addiction.

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