



Employment Rates in Flexible Assertive Community Treatment Teams in The Netherlands: An Observational Study

Hans E. Kortrijk¹ · Niels L. Mulder^{1,2} · Astrid M. Kamperman^{2,3} · Jaap van Weeghel^{4,5}

Received: 15 June 2016 / Accepted: 6 January 2018 / Published online: 17 January 2018
© Springer Science+Business Media, LLC, part of Springer Nature 2018

Abstract

We determined the proportions of clients treated in Flexible Assertive Community Treatment teams who were unemployed and gained employment and who were employed and lost employment. Secondly, we explored the demographical and clinical factors associated with employment. Data were collected during routine outcome monitoring. We calculated differences in employment rates over a year and explored differences in demographic characteristics at baseline between patient groups. Logistic regression analysis was used to estimate the role of clinical predictor variables on employment status. Over time, 10% remained employed, 5% lost their employment, 3% gained employment and 82% remained unemployed. Clients who found employment were younger, more often male, and had significantly fewer psychosocial problems and a higher subjective quality of life during follow-up than those who remained unemployed. Problems with motivation for treatment at baseline were related to losing employment or remaining unemployed. Better implementation of vocational services is very important for increasing the number of clients gaining employment.

Keywords Employment · Severe mental illness · Flexible Assertive Community Treatment · Vocational services

Introduction

Previous studies showed that many clients with severe mental illnesses (SMI) want to work (McQuilken et al. 2003; Secker et al. 2001), and consider working as an important part of their recovery process (Provencher et al. 2002; Shepherd et al. 2008). However, unemployment in this group of clients is high, ranging from 60 to 90% (Chan 2010; Crowther et al. 2001; Fioritti et al. 2014; Hajji et al. 2015;

Rosenheck et al. 2006; Torrey 1995). A recent survey conducted in the Netherlands (2016) among clients with long term psychiatric problems revealed an employment rate of 21%. As most of these clients suffer from multiple symptoms, have disadvantaged backgrounds or are long-term unemployed, they face serious barriers to employment (Bevan et al. 2013; Cook 2006). Since the turn of the century, mental healthcare services have made considerable progress towards developing rehabilitation and social inclusion programs that help clients with SMI to obtain and maintain a regular job (Bond et al. 2012; Burns et al. 2007; Killackey et al. 2008; Nuechterlein et al. 2008). A well-known program is the Individual Placement and Support (IPS) model of supported employment (Becker and Drake 2003), whose core principles are zero exclusion, a focus on competitive employment, rapid job search, integrating employment service within the treatment team, time-unlimited support, and a focus on patient preferences (Thomson 2003). With 22 randomized controlled trials demonstrating its effectiveness over other vocational rehabilitation approaches, IPS is recognized as an evidence-based practice (Bond et al. 2015). However, as only 4% of clients with an SMI in the Netherlands had access to IPS in 2014 (Fioritti et al. 2014; Michon et al. 2014), there is an evidence-to-practice gap

✉ Hans E. Kortrijk
h.kortrijk@parnassiagroep.nl

¹ Bavo-Europoort, Prins Constantijnweg 48-54,
3066 TA Rotterdam, The Netherlands

² Department of Psychiatry, Epidemiological and Social
Psychiatric Research Institute, Erasmus University Medical
Centre, Rotterdam, The Netherlands

³ Department of Psychiatry, Erasmus University Medical
Centre, Rotterdam, The Netherlands

⁴ Dijk en Duin mental health centre, Castricum,
The Netherlands

⁵ Tilburg School of Social and Behavioral Sciences, Tranzo
Scientific Centre for Care and Welfare, Tilburg University,
Tilburg, The Netherlands

regarding the actual implementation and use of employment interventions in clinical practice. To keep up with changing circumstances in contemporary mental health care we feel it is important to provide information on patient outcomes under real life practice circumstances. It would therefore be valuable to quantify what has been achieved in public mental health services such as Flexible Assertive Community Treatment (FACT) teams—in other words, whether SMI clients in contact with FACT without special vocational services find and maintain jobs. Our clinical experience tells us that the majority of clients with SMI has problems finding or maintaining a job. This study therefore may help create a sense of urgency needed to persuade mental health institutions to implement vocational services. FACT is a Dutch alternative for Assertive Community Treatment (ACT), FACT combines office-based and recovery-oriented regular care with shared case management and assertive outreach (i.e. ACT) for unstable clients who are at risk of relapse or readmission (Nugter et al. 2015; van Veldhuizen 2007). In this way, FACT teams can match the intensity of treatment to current patient needs (Bond and Drake 2007) and offer more continuity of care.

As well as investigating employment rates in FACT teams, this study aimed to explore the person-related factors associated with gaining or losing employment. Factors known to be associated with unemployment are gender, age, educational level, ethnicity, living circumstances, limited social skills, previous work history, and clinical factors such as the severity of psychopathology, diagnosis and cognitive deficits (Allott et al. 2013; Catty et al. 2008; Chang et al. 2014; Gilbert and Marwaha 2013; Hall et al. 2015; Holwerda et al. 2013; Kam et al. 2015; Phillips et al. 2014). Further exploration of person-related factors may be relevant for the development of effective work interventions that support finding and maintaining a job. The objectives of this study were (A) to determine the proportion of clients treated in FACT teams who were unemployed and gained employment, and who were employed and lost their employment over time; and (B) to explore and reflect upon demographical and clinical factors that are associated with finding or losing employment.

Materials and Methods

Study Setting and Data Collection

The study was conducted at BavoEuropoort (Mental Health Services provider) and involved clients from 18 FACT teams. BavoEuropoort is an institution for mental healthcare in the greater Rotterdam area that treats adults with psychiatric disorders. The total population of its catchment area is

approximately 1,300,000. BavoEuropoort employs a staff of some 1100 at 19 sites (see: <http://www.Bavo-Europoort.nl>).

There are two criteria for treatment by a FACT team: (a) age 18 or older, and (b) having a severe mental illness (SMI). A SMI is characterized by (1) a history of psychiatric illness or treatment for 2 years or more, and (2) having functional disabilities. Usually SMI refers to clients having a psychotic, severe anxiety, mood or personality disorder (with or without a co-morbid substance-use disorder) (Ruggeri et al. 2000).

The data for this study were collected in the context of a routine outcome-monitoring (ROM) procedure (Kortrijk 2013). ROM assessments were performed by mental-health professionals (such as nurses, psychologists and social workers), and were planned annually before treatment-plan evaluation. These assessments were used in clinical practice when discussing treatment progress with the patient. ROM data-collection was approved by the Dutch Committee for the Protection of Personal Data.

Data for this study apply to the period from January 2012 to June 2014, and were used confidentially. In our study setting, the community mental health care services (ACT and recovery-oriented regular ambulatory care) were transitioned into FACT teams during 2012 and 2013. There was no structural implementation of employment services in the FACT teams under study.

This observational study used two datapoints: we obtained repeated ROM assessments of 2150 unique clients, for whom the mean number of days between the first assessment and follow-up assessment was 423 days (SD = 174). The median number of days between the assessments was 383 days (25th percentile = 308 days; 75th percentile 539 days).

Measures

Employment Status and Goals

As part of the ROM assessment, each patient is asked about their current employment status and employment goals. To assess clients' employment status, we used the following categories: (1) employment having a paid job for a minimum of 1 h a week; (2) supported employment/job coaching; (3) education; (4) pre-retirement benefits; (5) volunteer work; (6) Law for Disability Insurance; Labour Capacity Act; General Disablement Pensions Act; (7) in search of employment; (8) not in search of employment; (9) no answer. We used the same categories to assess clients' employment goals. The patient was asked what employment goal they had set for the following year.

For analytic purposes 'employment status' was operationalized by combining categories 1 and 2 as having employment and 3–8 as not having employment. With regard to

‘employment goals’, we combined categories 1, 2 and 7 as being in search of employment or remained employed. Categories 3–6 and 8 were categorized as not in search of employment.

Quality of Life Scale (QoL)

To measure subjective quality of life, we used the Cumulative Needs for Care Monitor (CN CM; assessed in Dutch) quality-of-life scale (Drukker et al. 2010). This is based on the Lancashire Quality of Life Profile (Oliver et al. 1997) and is very similar to the Manchester Short Assessment of Quality of Life scale (MANSA) (Priebe et al. 1998). The quality-of-life scale has strong correlations with the Lancashire Quality of Life Profile (Drukker et al. 2010). The scale consists of seven items (Van Os et al. 2001): financial situation, accommodation/living situation, relationship with others, physical health, psychological health, working situation and life as a whole. These items are rated on a 7-point scale (1=“Couldn’t be worse” to 7=“Couldn’t be better”). To indicate a clients’ level of subjective Quality of Life, we calculated a Quality of Life total score (sum score of items 1–7).

Health of the Nation Outcome Scales (HoNOS)

The Health of the Nation Outcome Scales (HoNOS) was developed for routine use in measuring mental health outcomes (Wing et al. 1998). It consists of 12 clinician-rated scales, each using 5 point scale (0=“no problem” to 4=“severe/very severe problem”), and thus yielding a total score from 0 to 48. The HoNOS covers the following domains: (1) overactive, aggressive, disruptive or agitated behaviour; (2) non-accidental self-harm; (3) problem drinking and drug-taking; (4) cognitive problems; (5) physical illness and disability; (6) hallucinations and delusions; (7) depressed mood; (8) other psychological symptoms; (9) relationship problems; (10) problems with activities of daily living; (11) problems with living conditions; and (12) problems with occupation and activities. The psychometric properties of the English and Dutch HoNOS version have been found to be acceptable (Wing et al. 1998; Pirkis et al. 2005; Mulder et al. 2004). We calculated a HoNOS total score (sum score of items 1–12) indicating the severity of the psychosocial problems.

Motivation Item

The scale for assessing motivation for treatment was adapted from the Severity of Psychiatric Illness scale (Lyons 1998; Mulder et al. 2005, 2014), an observer-rated scale covering the last 2 weeks. It is scored in five categories (0=“highly motivated” to 4=“lack of motivation”) in the same way as

the Health of the Nation Outcome scales (HoNOS; Wing et al. 1998; Mulder et al. 2004).

Camberwell Assessment of Need Short Appraisal Schedule (CANSAS)

The CANSAS—a modified version of the Camberwell Assessment of Need (CAN) (Phelan et al. 1995)—consists of 22 items (Slade et al. 1999). To assess the need for care, it assesses health and social needs across several domains from the patient’s perspective. Each item is scored 0 (no problem), 1 (no problem or moderate problem due to help given: met need), or 2 (unmet need). The reliability of the English version of the CANSAS is acceptable (Trauer et al. 2008; Andresen et al. 2000). The needs for care were assessed using a Dutch translation of the CANSAS that included an addendum of five items (Drukker et al. 2010). The following items were used for this study: “daytime activities” and two addendum items, “paid work” and “recovery/meaning of life”.

Analyses

SPSS version 20 was used for all analyses. Between January 2012 and June 2014, 6479 clients with an SMI had contact with Bavo-Europoort. In the Routine Outcome Monitoring data we identified 2150 (33%) eligible clients i.e., those who had had at least 2 ROM assessments and were aged under 65. We stratified the sample on the basis of employment status (employment yes/no) at baseline. The number of clients unemployed at baseline and unemployed at follow-up (N = 1760) vastly exceeded the number unemployed at baseline and employed at follow-up (N = 70), and also the number employed at baseline (N = 320). To create a more balanced sample, for every unemployed patient who found employment during follow-up, we randomly selected four clients who did not find employment (N = 280). A 1:4 ratio optimally combines statistical power with low risk for bias (Rothman 2002).

For each stratum, we used a T-test (continuous variables) and Chi square tests (categorical variables) to test differences in demographic characteristics at baseline between patient groups. To estimate the role of clinical predictor variables, we used logistic regression analysis adjusting for age, sex, and educational level. Outcome variable was employment status (employment yes/no) at follow-up. Sensitivity analyses were performed to estimate the reliability of the results for the stratum of clients unemployed at baseline. Logistic regression analyses were repeated using the full sample (N = 1830), and conditional logistic regression analyses were conducted using a random sample matched for age, sex, and educational level (N = 280).

Effect sizes were used to facilitate the interpretation of the magnitude of an effect. In the event of categorical predictors, we report odds ratios. In the event of continuous predictor variables, we report both odds ratios and Cohen’s *d*. Cohen’s *d* (Cohen 1988) can have both a negative or positive value, and typically ranges between 2.0 and –2.0. A Cohen’s *d* of 0.2–0.3 is seen as a small effect, around 0.5 as a medium effect, and 0.8 and higher as a large effect.

Results

Patient Characteristics

The study sample included data from 2150 unique clients, most of whom were male (N = 1258; 59%). Their mean age was 43.9 years (SD = 10.8 years). Most of them (N = 1728; 81%) were unmarried or divorced, and 454 (23%) reported having had only elementary school or no education.

The majority of clients (N = 1274; 59%) had been diagnosed with a psychotic disorder, 543 (25%) with a mood disorder, 434 (20%) with a substance-use disorder, 343 (16%) with an anxiety disorder and 610 (28%) with a personality disorder.

Employment (Table 1)

At baseline, of all working-age clients aged between 18 and 65, 319 (15%) had a paid job. Among the unemployed clients, 513 (28%) said that they wanted a paid job. Over time, 210 (9.8%) of the total of 2150 clients remained employed, 110 (5.1%) lost their employment, 70 (3.3%) gained employment and 1760 (81.9%) remained unemployed. Thirty-three percent of the employed clients lost their jobs during follow-up.

Characteristics of Clients Who Gained Employment (Tables 2, 3)

A small fraction (N = 70; 3.8%) of the unemployed clients (N = 1830) in the study found employment at follow-up. The results in Table 2 show that clients who found employment were significantly younger than those who remained unemployed. The difference in age represents a medium effect size (Cohen’s *d* = .51). More men than women found work (odds ratio 1.81; 95% CI 1.04–3.16). Educational level had no significant relationship with finding work, although the odds ratio reflects a small association (odds ratio = 1.95; 95% CI .97–3.94).

Table 1 Employment status and employment goals (first assessment)

Employment status	Number of clients	%
Employment and supported employment	320	15
Not employed	1830	85
Total	2150	100
Employment goals (unemployed clients)	Number of clients	%
In search of employment or supported employment	467	28
Not in search of employment	1314	72
Total (three clients had missing data)	1830	100

Table 2 Demographic characteristics and employment status (comparison between clients who gained employment and remained unemployed)

	Gaining employment (N = 70) ^a	Remaining unemployed (N = 280) ^b	Test statistic
Demographic characteristics			
Age in years (mean (SD))	38.53 (9.1) years	43.79 (11.4) years	$t = -3.89, df = 348, p < .001$
Gender			
Male (N %)	48 (68.6%)	153 (54.6%)	$\chi^2 = 4.44, df = 1, p = .035$
Female (N %)	22 (31.4%)	127 (45.4%)	
Education			
No or only elementary school (N %)	11 (17.2%)	75 (26.8%)	$\chi^2 = 3.58, df = 1, p = .058$
Higher (N %)	53 (82.8%)	185 (73.2%)	

^tIndependent t-test; χ^2 = pearson chi square test

^aUnemployed clients who gained employment

^bClients who remained unemployed (random selection)

Table 3 Associations between clinical outcomes and gaining employment

	Gaining employment (N = 70) ^a	Remaining unemployed (N = 280) ^b	β adjusted	95% CI adjusted
Clinical outcomes				
Mean HoNOS total score (baseline) (SD)	10.9 (6.8)	12.3 (6.2)	.98	.93–1.02
Mean HoNOS total score (follow-up) (SD)	9.1 (7.2)	11.5 (6.2)	.94	.90 – .99*
Mean QoL total score (baseline) (SD)	32.3 (7.7)	31.3 (8.9)	1.02	.98–1.06
Mean QoL total score (follow-up) (SD)	35.5 (8.1)	32.5 (8.2)	1.05	1–1.09**
No problems with motivation for treatment (N %)	56 (21.4%)	206 (73.6%)	.46	.22 – .99*
Problems with motivation for treatment (N %)	14 (15.9%)	74 (26.4%)		
CANSAS needs for care—daytime activities (baseline)				
No need (N %)	24 (34.7%)	91 (33.4%)	.80	.42–1.4
Need	45 (65.3%)	181 (66.6%)		
CANSAS needs for care—employment (baseline)				
No need (N %)	28 (41.2%)	160 (61.1%)	2.24	1.23–4.07**
Need (N %)	39 (58.8%)	92 (38.9%)		
CANSAS needs for care—recovery (baseline)				
No need (N %)	33 (49.3%)	127 (47.4%)	.82	.46–1.48
Need (N %)	34 (50.7%)	141 (52.6%)		

β Adjusted for education level, gender, age

* $p < .05$; ** $p < .01$

^aUnemployed clients who gained employment

^bClients who remained unemployed (random selection)

Table 3 presents the results of the logistic regression, which show that clients who had found employment at follow-up had had lower HoNOS total scores at baseline (Cohen's $d = .22$; small effect size) than clients who remained unemployed. There was no significant association between QoL total scores at baseline (Cohen's $d = .12$; very small effect size) and employment at follow-up.

At follow-up, clients who had found employment had significantly less severe HoNOS total scores and significantly higher QoL total scores than those who had remained unemployed (Cohen's d respectively: .36 and .37). The effect sizes of these differences can be estimated as small to medium.

Problems with motivation for treatment were negatively related to gaining employment. The odds ratio reflects a small association between problems with motivation for treatment and employment status.

Expressing a need for care at baseline on the CANSAS items (daytime activities or recovery/meaning of life) was not significantly related to gaining employment (odds ratios reflect very small associations). However, if at baseline a patient expressed a need for care regarding a paid job, he or she was more likely to have found a job at follow-up (odds ratio is indicative of a small association).

Sensitivity analysis, repeating the analyses in the full sample, and using conditional logistic regression analyses with a matched sample, fully supported the above results.

Effects sizes differed marginally (< 8% discrepancy of reported Cohen's d).

Characteristics of Clients Who Lost Employment (Tables 4, 5)

At follow-up, a substantial number (N = 110; 33.3%) of the employed clients (N = 330) in this study had lost their employment. Table 4 shows that clients who had lost their job were the same age (Cohen's $d = .17$) as those who had remained employed. Gender was not related to losing employment (odds ratio .93; 95% CI .58–1.51). Neither was educational level significantly related to losing employment; the odds ratio of .63 (95% CI .31–1.26) reflects a small association.

Table 5 presents the results of the logistic regression, and shows that clients who had lost employment at follow-up had had the same HoNOS total scores at baseline (Cohen's $d = .05$) as those who had remained unemployed. There was no significant association between QoL total scores at baseline (Cohen's $d = .03$) and having lost employment at follow-up.

At follow-up, clients who had lost employment (Cohen's $d = .24$) had significantly more severe HoNOS total scores and significantly lower QoL total scores than clients who had remained employed (Cohen's $d = .29$). The effect sizes of these differences can be estimated as small.

Table 4 Demographic characteristics and employment status (comparison between clients who remained employed and those who lost employment)

	Remaining employed (N=210) ^a	Loss of employment (N=110) ^b	Test statistic
Demographic characteristics			
Age in years (mean (SD))	43.22 (10.2) years	41.55 (9.81) years	t = 1.404, df = 318, p = .161
Gender			
Male (N %)	137 (65.2%)	70 (63.6%)	$\chi^2 = .081$, df = 1, p = .776
Female (N %)	73 (34.8%)	40 (36.4%)	
Education			
No or only elementary school (N %)	22 (10.5%)	16 (14.5%)	$\chi^2 = 1.762$, df = 1, p = .184
Higher (N %)	180 (89.5%)	82 (85.5%)	

t Independent t-test; χ^2 = pearson chi square test

^aClients who remain employed

^bClients who lost their employment

Table 5 Associations between clinical outcomes and losing employment

	Remaining employed (N=210) ^a	Losing employment (N=110) ^b	β adjusted	95% CI adjusted
Clinical outcomes				
Mean HoNOS total score (baseline) (SD)	9.4 (6.3)	9.7 (6.1)	1.00	.96–1.04
Mean HoNOS total score (follow-up) (SD)	8.5 (6)	9.9 (5.9)	.96	.92–1.00*
Mean QoL total score (baseline) (SD)	34.2 (7.2)	34.4 (8.3)	1.00	.97–1.03
Mean QoL total score (follow-up) (SD)	34.7 (7.2)	32.4 (8.5)	1.04	1.00–1.08*
No problems with motivation for treatment (N %)	187 (89.0%)	84 (77.1%)	.50	.26–1.00*
Problems with motivation for treatment (N %)	23 (11.0%)	25 (22.9%)		
CANSAS needs for care—daytime activities (baseline)				
No need (N %)	128 (61.0%)	52 (50.0%)	.62	.37–1.03
Need	77 (39.0%)	52 (50.0%)		
CANSAS needs for care—employment (baseline)				
No need (N %)	138 (67.3%)	50 (49.5%)	.49	.29–.83**
Need (N %)	67 (32.7%)	51 (50.5%)		
CANSAS needs for care—recovery (baseline)				
No need (N %)	105 (52.0%)	51 (50.0%)	.81	.49–1.34
Need (N %)	97 (48.0%)	51 (50.0%)		

β Adjusted for education level, gender, age

*p < .05; **p < .01

^aClients who remained employed

^bClients who lost employment

Problems with motivation for treatment at baseline were related with losing employment during follow-up. The odds ratio reflects a small association between problems with motivation for treatment and losing employment.

Expressing a need for care at baseline on the CANSAS items (daytime activities and recovery/meaning of life) was not significantly related with losing employment. The respective odds ratios reflect very small to small associations. If at baseline a patient expressed a need for care regarding their job, he or she was more likely to lose their

job during follow-up (odds ratio .49; 95% CI .29–.83). This is indicative of a small association.

Discussion

Employment

Like previous studies on the vocational rehabilitation of clients with SMI in community mental healthcare services

(Rosenheck et al. 2006; Fioritti et al. 2014; Crowther et al. 2001), we found that clients who are in contact with FACT teams have high rates of unemployment (85%). Twenty-eight percent of the unemployed clients in our study said that they wanted a paid job—a contrast with previous studies indicating that most clients want to work (McQuilken et al. 2003; Fioritti et al. 2014).

As we did not examine different levels of involvement in work and orientation towards it, this difference between the proportions of clients desiring work may be related to differences in the definition of what is an employment goal. Another aspect of these different proportions might be explained by different socioeconomic situations in the Netherlands compared to e.g. the US. The Netherlands has a relatively high number of incapacity benefits claimants with a long term history of unemployment (Versantvoort and van Echtelt 2012).

The results also indicate that employment rates in FACT teams generally remained stable: 82% of all FACT clients remained unemployed over time (mean duration of 423 days), 10% remained employed, 5% lost their employment and 3% found employment over a period of approximately 1 year. This means that it was rare for clients with an SMI who were in contact with FACT teams lacking specialized employment services to find work, but also that clients had a substantial risk (33%) of losing their job.

Employment and Its Association with Demographic and Clinical Outcomes

Partly in line with previous studies (Gilbert and Marwaha 2013; Burke-Miller et al. 2006; Cook et al. 2008), our study suggests small to medium-sized associations between demographic characteristics (age, gender and education) and gaining employment. Younger clients and males were more likely to gain employment. Unexpectedly, education in our study sample was not significantly related to finding employment. This may be due to the small sample of clients who gained employment—only 70. We found no relationship between demographic characteristics and losing employment.

At follow-up, we found significant small to medium associations between gaining employment and the level of psychosocial problems (lower) and quality of life (higher). In spite of these significant associations, very few FACT clients found employment (3.9%). This means that while it may be helpful for an individual to express a need for paid employment and to have a low level of psychosocial problems, these are not sufficient conditions for them to find employment. This supports the suggestion that gaining employment usually occurs outside the realm of psychiatric treatment, if this treatment lacks specialized employment services. As we expected, employment may aid the subjective quality of

life of clients with an SMI. This is in agreement with our finding that clients who lost their employment had more severe psychosocial problems at follow-up than those who had remained employed, although we cannot distinguish cause and effect here. Losing employment was also associated with a significant decline in quality of life at follow-up.

We also found small but significant associations between problematic treatment motivation at baseline and gaining employment at follow-up. Problematic treatment motivation at baseline also predicted loss of employment at follow-up. The relationship between treatment motivation and gaining employment may not be so easy to interpret. While motivational problems—stopping antipsychotic medication, for example—are related to unemployment, problems such as a poor working alliance may also be paralleled by problematic interactions with a patient's environment, and may thereby reduce the chances of getting a job or create problematic work relations.

Expressing a need for a paid job was also associated with gaining employment at follow-up, indicating that these clients may have actively searched for employment. However, many clients who expressed a need for employment—i.e. those who could benefit from employment services—remained unemployed. Further, if a patient expressed a need for care at baseline with regard to their job (stress, concerns or dissatisfaction), he or she was more likely to lose that job at follow-up. As these clients were at risk of losing their job, they may have benefited from employment services. Further we found a small but non-significant relationship between expressing a need for daytime activities and losing work, possibly reflecting dissatisfaction with their working environment.

Clinical Implications

Taken together, we conclude that while obtaining employment is associated with better quality of life and parallels an amelioration of psychosocial problems, serious barriers to achieving employment are faced by many clients in contact with FACT services. In our setting, these FACT teams had no IPS practice. Thus, although these clients may have asked for employment services, such support was not effectively available in the FACT teams under study. Apparently FACT teams that have not implemented IPS or some other form of employment support are of little benefit to improving employment outcome of their clients. This was also one of the concerns with FACT services stated by Bond and Drake (2007), who were worried that usual case-management services could devolve into brief contacts with clients rather than provide recovery-oriented treatment. To help clients find a job, we therefore stress the importance of implementing employment services [such as IPS (Fioritti et al. 2014)]

as an integral part of the mental-health services delivered in FACT teams, and community mental health teams in general (Van Veldhuizen and Bähler 2013). Further, as 33% of the clients with a job lost their jobs during follow-up, helping clients remain in their jobs should be an important task of employment services for SMI clients in community mental health teams and FACT teams—especially for clients who are at risk of losing their job, such as those whose motivation for treatment or psychosocial functioning is deteriorating, and those who express concerns about their work.

While approximately half of the clients in our study expressed a need for care on the item ‘recovery and meaning of life’, this need was not related to losing or gaining employment. In other words, clients who gained or lost employment were equally likely to express a need for recovery as compared to those who remained unemployed or remained employed. While working is often seen as an important part of a recovery process, our data does not indicate a relationship between working and expressing a need for care for recovery/meaning of life. Part of this discrepancy may be related to different definitions of recovery/meaning of life, a broad topic we had assessed as a single item. The results nonetheless suggest that other factors beside employment contribute to the considerable need for recovery/meaning of life.

In conclusion, because employment is paralleled by favorable outcomes in terms of better psychosocial functioning and quality of life, we stress that vocational rehabilitation has much to contribute and should be seen as part of good clinical treatment.

Strengths and Limitations

This observational study has a number of strengths and limitations. The first strength is its generalizability, as our results provide insight into the performance of outpatient mental health services—of what has actually been achieved in daily practice; they reflect the patterns of actual practice, at least in the Netherlands with FACT being the standard outpatient care-delivery model for SMI clients. The second strength is that the explorative character of the study allowed us to identify clients who might benefit from interventions intended to help them find a job. Third, as finding employment is a rare event, the extensive size of the ROM cohort made it possible to study this outcome, taking account of sex, age and educational level. Fourthly, since sensitivity analyses produced similar outcomes, we can conclude that our results are reliable.

We identified five limitations, the first concerns the observational design, which did not allow us to determine causality. The second is the fact that we used data from a Routine Outcome Monitoring procedure, and therefore had

no information on other factors that predict employment, e.g. internal and external barriers for finding employment such as the unemployment rate in the region of interest (Bond and Drake 2008). Neither did we examine different levels of involvement and orientation toward work, which may have produced different proportions of clients desiring work (McQuilken et al. 2003). As not all clients were assessed annually in the Routine Outcome Monitoring procedure, the third limitation concerns the missing data in our study: we were able to assess only 33% of the total of 6479 clients twice. This may lead to a selection bias. (A) It may be that clients without multiple ROM assessments are more difficult-to-engage and therefore difficult to assess. Since difficult-to-engage clients may have more severe problems, this may lead to an underestimation of problem severity. (B) Clients who were recently referred to mental health care also have only one assessment, their second ROM assessment was not yet planned. This selection of clients is not related to patient related factors. (C) Clients who show a remarkable quick improvement in their psychiatric condition sometimes leave a FACT team without completing their follow-up ROM assessment. This patient selection may lead to an underestimation of the treatment effect. However, we do not expect selection bias to have had a significant impact on the proportion of clients who were employed, as our calculations are in agreement with other studies (Fioritti et al. 2014).

Fourthly, we lack data on the degree of implementation of the FACT model. Although no structural implementation of employment services took place in the FACT teams during the assessment period, this lack of data prevented us from looking in more detail into which treatment components may have contributed to clients’ finding or keeping employment. Finally, employment status was categorized into two groups and employment was operationalized by combining the categories employment and supported employment. This may have marginally impacted (small number of clients in supported employment) the associations found in our study and losing some of the specific relations between employment (without supported employment) and patient-related factors.

Acknowledgements We thank David Alexander who provided medical writing services of on behalf of the investigators listed in this project.

Compliance with Ethical Standards

Conflict of interest The authors declare that there are no conflict of interests and no financial interests.

References

- Allott, K. A., Cotton, S. M., Chinnery, G. L., Baksheev, G. N., Massey, J., Sun, P., ... Proffitt, T. M. (2013). The relative contribution of neurocognition and social cognition to 6-month vocational

- outcomes following Individual Placement and Support in first-episode psychosis. *Schizophrenia Research*, 150(1), 136–143.
- Andresen, R., Caputi, P., & Oades, L. G. (2000). Interrater reliability of the Camberwell assessment of need short appraisal schedule. *Australian and New Zealand Journal of Psychiatry*, 34(5), 856–861.
- Becker, D. R., & Drake, R. E. (2003). *A working life for people with severe mental illness*. New York: Oxford University Press.
- Bevan, S., Gulliford, J., Steadman, K., Taskila, T., Thomas, R., & Moise, A. (2013). *Working with schizophrenia: Pathways to employment, recovery & inclusion*. Lancaster: The Work Foundation, Part of Lancaster University.
- Bond, G. R., & Drake, R. E. (2007). Should we adopt the Dutch version of ACT? Commentary on “FACT: A Dutch version of ACT”. *Community Mental Health Journal*, 43(4), 435–438.
- Bond, G. R., & Drake, R. E. (2008). Predictors of competitive employment among patients with schizophrenia. *Current Opinion in Psychiatry*, 21(4), 362–369.
- Bond, G. R., Drake, R. E., & Becker, D. R. (2012). Generalizability of the Individual Placement and Support (IPS) model of supported employment outside the US. *World Psychiatry*, 11(1), 32–39.
- Bond, G. R., Kim, S. J., Becker, D. R., Swanson, S. J., Drake, R. E., Krzoss, I. M., ... Frounfelker, R. L. (2015). A controlled trial of supported employment for people with severe mental illness and justice involvement. *Psychiatric Services*, 66, 1027–1034.
- Burke-Miller, J. K., Cook, J. A., Grey, D. D., Razzano, L. A., Blyler, C. R., Leff, H. S., ... Hoppe, S. K. (2006). Demographic characteristics and employment among people with severe mental illness in a multisite study. *Community Mental Health Journal*, 42(2), 143–159.
- Burns, T., Catty, J., Becker, T., Drake, R. E., Fioritti, A., Knapp, M., ... White, S. (2007). The effectiveness of supported employment for people with severe mental illness: A randomised controlled trial. *The Lancet*, 370(9593), 1146–1152.
- Catty, J., Lissouba, P., White, S., Becker, T., Drake, R. E., Fioritti, A., ... Van Busschbach, J. (2008). Predictors of employment for people with severe mental illness: Results of an international six-centre randomised controlled trial. *The British Journal of Psychiatry*, 192(3), 224–231.
- Chan, M. (2010). *Mental health and development: Targeting people with mental health conditions as a vulnerable group*. Geneva: World Health Organization.
- Chang, W. C., Tang, J. Y. M., Hui, C. L. M., Chan, S. K. W., Lee, E. H. M., & Chen, E. Y. H. (2014). Clinical and cognitive predictors of vocational outcome in first-episode schizophrenia: A prospective 3 year follow-up study. *Psychiatry Research*, 220(3), 834–839.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd edn.). Hillsdale, NJ: L. Erlbaum Associates.
- Cook, J. A. (2006). Employment barriers for persons with psychiatric disabilities: Update of a report for the president’s commission. *Psychiatric Services*, 57(10), 1391–1405.
- Cook, J. A., Blyler, C. R., Burke-Miller, J. K., McFarlane, W. R., Leff, H. S., Mueser, K. T., ... Donegan, K. (2008). Effectiveness of supported employment for individuals with schizophrenia: Results of a multi-site, randomized trial. *Clinical Schizophrenia & Related Psychoses*, 2(1), 37–46.
- Crowther, R., Marshall, M., Bond, G., & Huxley, P. (2001). Vocational rehabilitation for people with severe mental illness. *Cochrane Database of Systematic Reviews*. <https://doi.org/10.1002/14651858.CD003080>.
- Drukker, M., Bak, M., Campo, J., Driessen, G., Van Os, J., & Delespaul, P. (2010). The cumulative needs for care monitor: A unique monitoring system in the south of the Netherlands. *Social Psychiatry and Psychiatric Epidemiology*, 45(4), 475–485.
- Drukker, M., van Os, J., Bak, M., à Campo, J., & Delespaul, P. (2010). Systematic monitoring of needs for care and global outcomes in patients with severe mental illness. *BMC Psychiatry*, 10(1), 1.
- Fioritti, A., Burns, T., Hilarion, P., van Weeghel, J., Cappa, C., Suñol, R., & Otto, E. (2014). Individual placement and support in Europe. *Psychiatric Rehabilitation Journal*, 37(2), 123.
- Gilbert, E., & Marwaha, S. (2013). Predictors of employment in bipolar disorder: A systematic review. *Journal of Affective Disorders*, 145(2), 156–164.
- Hajji, K., Chebbi, W., Marrag, I., Soussia, R. B., Younes, S., Zarrouk, L., & Nasr, M. (2015). Sociodemographic and Clinical Profile of Frequent Visitors to Psychiatric Emergency. *European Psychiatry*, 30, 658.
- Hall, P. V., Montgomery, P., Davie, S., Dickins, K., Forchuk, C., Jeng, M. S., ... Solomon, M. (2015). Seeking and securing work: Individual-level predictors of employment of psychiatric survivors. *Work*, 52(1), 91–101.
- Holwerda, A., Groothoff, J. W., de Boer, M. R., van der Klink, J. J., & Brouwer, S. (2013). Work-ability assessment in young adults with disabilities applying for disability benefits. *Disability and Rehabilitation*, 35(6), 498–505.
- Kam, S. M., Singh, S. P., & Uptegrove, R. (2015). What needs to follow early intervention? Predictors of relapse and functional recovery following first-episode psychosis. *Early Intervention in Psychiatry*, 9(4), 279–283.
- Killackey, E., Jackson, H. J., & McGorry, P. D. (2008). Vocational intervention in first-episode psychosis: Individual placement and support v. treatment as usual. *The British Journal of Psychiatry*, 193(2), 114–120.
- Kortrijk, H. E. (2013). *Use of routine outcome monitoring data for evaluating assertive community treatment* (Doctoral dissertation, Erasmus MC: University Medical Center Rotterdam).
- Lyons, J. S. (1998). *The severity and acuity of psychiatric illness scales: An outcomes-management and decision-support system: Child and adolescent version: Manual*. San Antonio: Psychological Corporation.
- McQuilken, M., Zahniser, J. H., Novak, J., Starks, R. D., Olmos, A., & Bond, G. R. (2003). The work project survey: Consumer perspectives on work. *Journal of Vocational Rehabilitation*, 18(1), 59–68.
- Michon, H., van Busschbach, J. T., Stant, A. D., van Vugt, M. D., van Weeghel, J., & Kroon, H. (2014). Effectiveness of individual placement and support for people with severe mental illness in the Netherlands: A 30-month randomized controlled trial. *Psychiatric Rehabilitation Journal*, 37(2), 129.
- Mulder, C. L., Jochems, E., & Kortrijk, H. E. (2014). The motivation paradox: Higher psychosocial problem levels in severely mentally ill patients are associated with less motivation for treatment. *Social Psychiatry and Psychiatric Epidemiology*, 49(4), 541–548.
- Mulder, C. L., Koopmans, G. T., & Hengeveld, M. W. (2005). Lack of motivation for treatment in emergency psychiatry patients. *Social Psychiatry and Psychiatric Epidemiology*, 40(6), 484–488.
- Mulder, C. L., Staring, A. B. P., Loos, J., Buwalda, V. J. A., Kuijpers, D., Sytema, S., & Wierdsma, A. I. (2004). De Health of the Nation Outcome Scales (HONOS) als instrument voor ‘routine outcome assessment’. *Tijdschrift voor Psychiatrie*, 46, 273–284.
- Nuechterlein, K. H., Subotnik, K. L., Turner, L. R., Ventura, J., Becker, D. R., & Drake, R. E. (2008). Individual placement and support for individuals with recent-onset schizophrenia: Integrating supported education and supported employment. *Psychiatric Rehabilitation Journal*, 31(4), 340.
- Nugter, M. A., Engelsbel, F., Bähler, M., Keet, R., & van Veldhuizen, R. (2015). Outcomes of Flexible Assertive Community Treatment (FACT) implementation: A prospective real life study. *Community Mental Health Journal*, 52, 898–907.
- Oliver, J. P. J., Huxley, P. J., Priebe, S., & Kaiser, W. (1997). Measuring the quality of life of severely mentally ill people using the Lancashire Quality of Life Profile. *Social Psychiatry and Psychiatric Epidemiology*, 32(2), 76–83.

- Phelan, M., Slade, M., Thornicroft, G., Dunn, G., Holloway, F., Wykes, T., ... Hayward, P. (1995). The Camberwell Assessment of Need: The validity and reliability of an instrument to assess the needs of people with severe mental illness. *The British Journal of Psychiatry*, *167*(5), 589–595.
- Phillips, B. N., Kaseroff, A. A., Fleming, A. R., & Huck, G. E. (2014). Work-related social skills: Definitions and interventions in public vocational rehabilitation. *Rehabilitation Psychology*, *59*(4), 386.
- Pirkis, J. E., Burgess, P. M., Kirk, P. K., Dodson, S., Coombs, T. J., & Williamson, M. K. (2005). A review of the psychometric properties of the Health of the Nation Outcome Scales (HoNOS) family of measures. *Health and Quality of Life Outcomes*, *3*(1), 1.
- Priebe, S., Huxley, P., Knight, S., & Evans, S. (1998). Application and results of the Manchester Short Assessment of Quality of Life (MANSA). *The International Journal of Social Psychiatry*, *45*(1), 7–12.
- Provencher, H. L., Gregg, R., Mead, S., & Mueser, K. T. (2002). The role of work in the recovery of persons with psychiatric disabilities. *Psychiatric Rehabilitation Journal*, *26*(2), 132.
- Rosenheck, R., Leslie, D., Keefe, R., McEvoy, J., Swartz, M., Perkins, D., ... Lieberman, J. (2006). Barriers to employment for people with schizophrenia. *American Journal of Psychiatry*, *163*(3), 411–417.
- Rothman, K. J. (2002). *Measuring interactions. Epidemiology: An introduction* (pp. 168–180). Oxford: Oxford University Press.
- Ruggeri, M., Leese, M., Thornicroft, G., Bisoffi, G., & Tansella, M. (2000). Definition and prevalence of severe and persistent mental illness. *The British Journal of Psychiatry*, *177*(2), 149–155.
- Secker, J., Grove, B., & Seebohm, P. (2001). Challenging barriers to employment, training and education for mental health service users: The service user's perspective. *Journal of Mental Health*, *10*(4), 395–404.
- Shepherd, G., Boardman, J., & Slade, M. (2008). *Making recovery a reality* (pp. 1–3). London: Sainsbury Centre for Mental Health.
- Slade, M., Beck, A., Bindman, J., Thornicroft, G., & Wright, S. (1999). Routine clinical outcome measures for patients with severe mental illness: CANSAS and HoNOS. *The British Journal of Psychiatry*, *174*, 404.
- Thomson, R. E. D. A. Jr. (2003). *A working life for people with severe mental illness*. Oxford: Oxford University Press.
- Torrey, E. F. (1995). *Surviving schizophrenia: A manual for families, consumers, and providers*. New York: HarperPerennial.
- Trauer, T., Tobias, G., & Slade, M. (2008). Development and evaluation of a patient-rated version of the Camberwell Assessment of Need Short Appraisal Schedule (CANSAS-P). *Community Mental Health Journal*, *44*(2), 113–124.
- Van Os, J., Delespaul, P. A. E. G., Radstake, D. W. S., Hilwig, M. M., Bak, M. L. F. J., & Driessen, G. A. M. (2001). Kernparameters ter evaluatie van een zorgprogramma voor psychotische patiënten. *Maandblad voor de Geestelijke Volksgezondheid*, *56*(10), 952–966.
- Van Veldhuizen, J. R. (2007). FACT: A Dutch version of ACT. *Community Mental Health Journal*, *43*(4), 421–433.
- Van Veldhuizen, J. R., & Bähler, M. (2013). Manual flexible ACT vision, model, practice and organization, Groningen.
- Versantvoort, M., & van Echtelt, P. (2012). *Belemmerd aan het werk. Trendrapportage ziekteverzuim, arbeidsongeschiktheid en arbeidsdeelname personen met gezondheidsbeperkingen*. Den Haag: Sociaal en Cultureel Planbureau.
- Wing, J. K., Beevor, A. S., Curtis, R. H., Park, S. B., Hadden, S., & Burns, A. (1998). Health of the Nation Outcome Scales (HoNOS). Research and development. *The British Journal of Psychiatry*, *172*(1), 11–18.